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Archives of Dermatology and Syphilology

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THE REMARKABLE MEDICINE GUAIACUM AND THE CURE OF THE GALLIC DISEASE

BY ULRICH VON HUTTEN, GERMAN KNIGHT

TO PRINCE ALBERT, CARDINAL AND ARCHBISHOP

TRANSLATED BY

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PREFACE

Ulrich von Hutten, German Knight, was in no respect a lovable person. Diseased in body and cantankerous of disposition he led a life of persistent and bitter warfare against a succession of foes. As a child he was at odds with his father over the latter's determination to make him a priest, and at the age of 17, in the year 1505, he ran away from the Benedictine monastery of Fulda to circumvent this purpose. Adversities gathered around him like filings around a magnet, and his life for the next four years consisted of wandering from place to place, usually in dire financial straits and regularly engaged in some controversy or other. This period of his quarrelsome career culminated in his violent ejection at the hands of hostile colleagues from a teaching position which he had secured at Greifswald. From there he fled to Rostock, where he was for the moment befriended by the equally belligerent humanists. He made use of this period of respite to write the bitterest of satires against his former associates at Greifswald. His welcome worn out, he began again his unfriended wanderings and adventures until, after a season as a private soldier in the army of the Emperor, he was accepted in 1514 as the protegé of Albert, Elector of Mainz and Archbishop of Brandenburg. It was to this dignitary that he dedicated his book on the Gallic disease. Even before its publication, however, a new object of his venomous satire had developed in the person of Ulrich, Duke of Wuertemberg, who in 1515 compassed the death of a relative named Hans von Hutten. Ulrich von Hutten is supposed to have written many of the "Epistolae obscuromm virorum." His bitter pen was in general occupied with polemics in defence of humanism and of the German knighthood. With Erasmus, however, he became involved in a desperately vindictive literary quarrel because the great humanist, dis-

gusted with von Hutten's diseases and fearful of his inveterate habit of borrowing money, refused to receive him. The court, too, was fearful of his extreme attacks on the Pope. His latter years, like most of his earlier ones, were spent in buffeted wanderings from place to place until Zwingli secured for him a retreat on the island of Ufnau, where he died in 1523 at the age of 35. His fame rests almost entirely on his power of invective and satire expressed in poems, orations, letters and treatises.

Ulrich von Hutten was never trained as a doctor. The treatise on the Gallic disease (the name syphilis was not yet used) is a combination of his own experiences and his gleanings from contemporary gossip and ancient literature. His acid personality and thoroughgoing intolerance, produced quite possibly by his long years of intense suffering, appear in the treatise most clearly when he has occasion to discuss doctors for whom, with a few notable exceptions, he had less than no respect. They also led him into a long satire on luxury (chapter xix) which is quite in the spirit of Juvenal but without his rugged force. At the same time von Hutten shows a keen power of observation which gives to this treatise, written within a quarter of a century of the appearance of the disease with which it deals, a certain permanent value from the medical point of view. His treatment of the subject is thorough, orderly and wholly sincere.

The treatise on guaiacum was published at Mainz in 1519. In the same year a German translation, so-called, came out at Strassburg, made by Thomas Murner. This is in reality a free paraphrase with considerable sections of the text omitted. A French translation was made by Jehan Cheradame in 1530. The first and only English translation was made by Thomas Paynell in 1539. Daniel Turner is supposed to have made a translation in 1730, but he admitted that he had not seen the Latin original and merely revised the work of Paynell. The best rendering that exists today is that of Heinrich Oppenheimer into German, published in Berlin in 1902. This is an excellent piece of work with a somewhat dangerous tendency to adopt modern medical terminology. The best Latin text of the treatise and the one used in making the present translation is to be found in the fifth volume of the collected works of Ulrich von Hutten, edited by Eduard Boecking and published by B. G. Teubner at Leipzig in 1861.

It would be untrue to say that von Hutten was a master of Latin style. He did, however, write easily and without obscurity. The present translation makes no effort to attain an English style more polished than the Latin. It is an attempt to approximate in form the somewhat awkward original and to reproduce it accurately and fairly literally so far as the content is concerned. The initiative as well as the compelling power in the undertaking, has come from Dr. John Lane, who has also done the less pleasant parts of the work. To him it is

offered as an incongruous and inadequate but nevertheless sincere token of esteem and affection.

CHAPTER I: ON THE ORIGIN AND NAME OF THE GALLIC DISEASE

It has seemed best to God that in our age diseases should arise, unknown, as we may judge, to our ancestors. It was in the year 1493 or thereabouts that there crept in a baneful disease, not first in Gaul to be sure but at Naples; the name for it was, however, taken from Gaul because before emerging elsewhere it appeared in the army of the Gauls which was fighting at Naples under its King Charles. From which occurrence the Gauls, fending off from themselves the ominous name, call it not the Gallic but the Neapolitan disease and consider it an insult that the pest is named from them. Nevertheless the consensus of human kind has prevailed, and in this little work I shall call it the Gallic disease, not with any derogation of that most glorious people than which there is scarcely any more civilized or cultured, but in fear lest all might not sufficiently understand if I called it by any other name. A remarkable superstition attached itself at once to the disease, some calling it Menian from the name of some god while others sought its origin in the eruptions of Job whom I suppose this pest removed to the gods; at that time the monk Euagoras was thought to have formerly languished with no other disease when through the endurance of cold in desert countries and through the eating of raw food he was afflicted with boils; and so men sought him out in long journeys and great throngs went to his shrine in Westereich, bringing gifts in great number, and called the shrine Fiacrius instead of Euagerus since his name was not yet known generally in Germany; nor did they ask how he had lived but believed simply that he could help. Such in face of this terror were the beliefs of men and so they arose. Relics were also exhibited at the shrine of S. Roch and the sores of all were rubbed from the ancient one. If this was in a spirit of piety I do not criticize it, but if it was to enable the inventors to make some profit I marvel that in such a miserable calamity of the human race, in such common suffering, there was a place for fraud. Thereupon the theologians made explanation that the wrath of God was exacting this penalty for our evil characters, wreaking this punishment, as if they had sometime learned this by being admitted to the heavenly council and so taught it to the public, as though men never lived worse, or as though in that golden age of Augustus and Tiberius during which Christ also happened to be on the earth, the worst of diseases had not sprung up; or as though nature had not the power to bring in new diseases from time to time and even in other things to introduce occasionally the greatest change, or as though in our age particularly and finally in these last two years the remedy guaiacum had been found

because forsooth men are most moral. So inconsistent are the things which those men preach to us who as they think interpret the minds of the gods; thence comes to the doctors the task of finding not what may remove the disease but what causes it. Furthermore men avoided the sight of it to say nothing of keeping from contact with it as from no other disease. For it was of such foulness when first it appeared as to be considered scarcely of the same sort as that which now prevails: the sores were of the form and size of an acorn, hard, projecting; a foul excretion flowed from these; such a stench was exhaled that whosoever's nostrils were reached by the odor was supposed to be at once infected; the color of the sores was black verging on green; they tortured the victims more by the sight than by the pain, although they caused suffering if they happened even to be inflamed anywhere. Not long after its origin the disease extended itself into Germany where it spread more widely than anywhere else. This fact I attribute to our intemperance. Those who at the time consulted the stars foretold that this pest would rage not more than seven years; if they meant the disease itself and in general its derivatives, they spoke falsely, but truly if they referred to that foulest form which arose spontaneously and not merely by contagion but rather from the fault of the atmosphere or by the ordering of fate: for this was not destined to prevail for much more than seven years. That which followed and which is now widely prevalent though less foul and more tolerable inasmuch as it has sometimes small sores that do not project far and are very hard, while sometimes a widely creeping infection covers the flesh with dry scale, is more dangerous since its poison penetrates more deeply and it brings several other diseases in its train. It is to be believed that this does not now come to any one who has not suffered contagion which is wont especially to occur in intercourse; whence it comes that the disease very rarely attacks boys or old men or others who refrain from intercourse; it attacks the more easily the man more sexually active and more given to the satisfaction of passion. Those whom it has already attacked, according to their mode of life, it either leaves quickly, or holds for a long time or consumes entirely. Toward all the people of Italy and Spain and wherever besides men are restrained, it is more mild; because of our intemperance in food and drink it both besets us for longer and when it has seized us tortures us most viciously and afflicts us most bitterly.

CHAPTER II: ON THE CAUSES OF THIS DISEASE

The investigation by medical men into the hidden causes of the disease is not yet concluded, but the question has been long since wretchedly agitated and the search carried on with the greatest discord.

On this point all agreed, which is easy to understand, that by a certain unhealthy blast of air that existed at that time the lakes were infected, the springs, the rivers and even the oceans themselves; thence the earth contracted the poison, the meadows were contaminated, a poisoned vapor came down from the air and thence animals drank in the breath of it: for this disease was found even in certain other living creatures. Then the astrologers, reasoning from the motion of the stars referred the cause of the pest to the conjunction of Saturn and Mars which had occurred shortly before and to two eclipses of the sun, saying that these ought to presage diseases of a catarrhic, bilious nature, long, tenacious, slow, such as elephantiasis, leprosy, impetigo, and the worst sorts of scale and eruption and such things as deform the body, and gout and cheiragra, paralysis, ischia and diseases of the joints and similar disabilities; this was destined to occur more however in the north on account of the sign of Aquarius in which the first eclipse occurred and in the west because of Pisces where the second had fallen; and the doctors said that the sickness came from bad liquid within and from vicious humors, melancholic and fevered, or from yellow bile, or from phlegm either salty or inflamed and that, by this liquid or by some of these humors or even by all combined together, their sourness working outward to the surface of the body, the skin was inflamed and ulcerated, or, in the immature, the sluggish, and the stout, it was forced into the joints; pain was caused in these, swellings arose, boils originated, tumors gathered and the skin was wrinkled, finally even the head was attacked; in general, the former constitution of the body was changed. Some said briefly that this pest arose from infected, corrupt and inflamed blood. Such things were argued in the dark, while its nature was still incomprehensible: now when the nature is understood they are still approved and it behooves us to think that this sickness is nothing but a certain suppuration of diseased blood, which afterward dries and hardens into tumors and boils and whose flow puts forth as from an infected liver. Beyond this as to what is its nature, its conditions, its quality, how great and how unpleasant has been the investigation, what strife there has been, how many opinions how anxiously disputed! And in the case of this disease especially it has been found out in what difficulty is the medical art in our age. From the beginning of the disease the doctors in Germany maintained silence for two years. Then when I was in my boyhood they began the cure; with what results the event has shown: they ventured, however, to make for us strange foreign mixtures and to use many things which are least fitting to teach. I remember at that time it was forbidden in certain places to eat peas because there grew in them winged worms

whence it was believed contagion came; and pork because the pig more than other animals was afflicted with this disease or with a certain kind of ulcer not dissimilar to it.

CHAPTER III: INTO WHAT DISEASES THE GALLIC DISEASE SPREADS

The more vicious results which follow this disease make it in itself light, for into so many things does this one spread that all diseases may seem to be contained in one: of which one is acute suffering of the joints, simple to be sure at first, but then when those members which are suffering swell, it cannot be expressed what tortures the cysts and tumors that have swollen up nourish within them when they have grown callous; this is the worst stage of the disease: for it chooses this for its citadel as it were, where it persists longest and whence it disperses and drives into the whole body all kinds of sufferings with all the more agony the more slowly this kind of tumor allows of suppuration; and of all sufferings this one tortures and lacerates most cruelly. In my own case one such tumor above the ankle of the left foot on the inside, when once it had induced callous, for eight years could not be forced to suppurate by the force of any ointment or by any applications; it seemed to be bone until by the curing property of guaiacum it was recently dissipated and vanished. In women small ulcers remain within the pudenda, sources of great poisoning power for a long time, and these are so much the more dangerous as they suffer themselves to be seen less by the eyes of those who would be careful in cohabiting with women. And for this very reason this phase of the disease is the most dangerous because in it one may not avoid the pest since the bodies of women of this sort are most unconsidered and unclean. The sinews too are contracted and hardened; sometimes they are distended and become relaxed or stiffen; at times the disease passes into pure gout; in some people it goes over into paralysis and what is called apoplexy; in many it brings on leprosy, and these diseases are believed to be most closely related both because of certain causes which are common to them and also because of the fact that one often carries the sick man over into the other. Often men shiver from the severity of the pain as though they were going to fall into a fever. Often too abscesses form which sometimes pass into cancer or into a fistula or into long lasting sores which frequently rot to such an extent that they first even uncover the bones which then contract the flesh and are very dangerously wasted. Furthermore when the aftermath of this disease is lightest men become so emaciated by the persistence of the sickness that the very bones within are covered by loose skin only, all the flesh having been consumed. Thence they become con-

sumptive, their intestines flowing with putrid matter; consumption is induced in most patients and they contract dropsy; in some the bladder is ulcerated and most generally of all the liver and stomach are wholly destroyed by the disease. But in this connection this is false which some believe, that tumors, ulcers, cysts, and boils are not proper symptoms of this disease nor of necessity follow it but come to those who have been anointed with the malicious mercury, notwithstanding a great part of the doctors in Germany persist to this day most stubbornly in this opinion; but these, however many they be, just as they are in many other matters with regard to this disease shamefully mistaken, so this too they have tried rashly to prove: for I myself have seen this result come to many whom no ointment has ever touched, and among them my father, Ulrich von Hutten.

CHAPTER IV: WITH WHAT TREATMENT A STAND WAS FIRST MADE AGAINST THIS DISEASE

In this confusion of the doctors the surgeons turned their hands to attack these errors, and first they tried to burn out the scale with caustics, then since it was an enormous task to touch each sore, applying the cure so many times, they bethought them of smothering it with ointment. This they did in different ways, but none with any results who did not add mercury. There served to this purpose powder of myrrh, mastic, white lead, laurel berries, alum, Armenian earth, cinabar, red lead, coral, burned salt, verdigris, lead slag, burned lead, iron rust, common resin and terebinth; of all the oils laurel worked best, then simple, oil of roses, terebinth, and with great effect juniper and spikenard; lard from the fat of pig, goose, bear, man, marten; likewise fat from the hoof of the ox; butter, especially that pressed in the month of May; stag marrow, suet of goat or deer, rose-honey and that honey which they call virginal; earth worms ground to dust or torn and pounded with oil; camphor, euphorbium and castor oil. And with three or four or sometimes more of these mixed they anointed the joints of the arms and legs, some also the spine and neck, some even the temples, likewise also the navel and others again the whole body; some once a day, some twice, some again three or four times. The patient was shut up in a hot room which was steadily and most vigorously heated, some <keeping him there> for twenty days, some for thirty, some for more; they anointed him and placed him on a bed laid in the hot room and with many covers over him forced him to sweat. The patient after being anointed barely the second time began to grow weak in remarkable fashion: such was the violent effect of the ointment that it forced the disease which had been on the surface of the body

into the stomach; thence it rose to the brain and thence flowed through the throat and mouth to such an extent and with such violent injury that the teeth fell out in the case of those who had not cared well for their mouths; at the least in all cases the throat, tongue, and palate were ulcerated, the gums swelled, the teeth were loosened, sputum flowed without intermission through the lips with more stench than that of any foul matter and with such power of contagion that whatever it touched it immediately befouled and contaminated; whence the lips so touched contracted sores and the cheeks inside were infected. The whole house round about stunk and this type of treatment was so hard that many preferred to die of the disease rather than be cured in this way. As a matter of fact scarcely one in a hundred were cured, the patient usually suffering a relapse, his relief lasting only a few days. From this presentation it can be realized what I endured with this disease having experienced this treatment eleven times. With such danger, with such bitter uncertainty, have I struggled with the pest for nine years, having meanwhile tried no less thoroughly other means by which it was thought the sickness could be withstood; for I had treatment with baths and with herb plasters and potions, and with erosion of the ulcers. For this treatment arsenic was used and copper vitriol and verdigris, or what is called aqua fortis, with such intensity of suffering that those who do not prefer to die rather than prolong life in this way may be considered too greedy of life. But the most painful of all was the treatment with ointment and in this the most terrible thing was that those who administered the treatment did not themselves understand the means used: for not surgeons alone used this method but all the boldest who had seen it in others or endured it themselves went around playing the doctor. They used any one ointment for all cases and as <Galen> says: "With one shoe, they shoed all: with one ointment they cured all," If anything happened meanwhile to the patient, through lack of knowledge, they had no advice to give and these highwaymen were endured, as happens in general confusion, since the doctors kept quiet and it was free for all to try what they would. And so with no order or system, except that they tortured all alike with heat and vapor, the sick were treated with no consideration of time or of the state of the body. Nor did these anointers in their ignorance draw off from the stomach the matter which was the source of the disease or prescribe any temperance in food or drink or any attention to diet. At length it came to such an unhappy stage that the use of the teeth was lost since they were loosened; and that besides the sick lost all appetite for food since the mouth was one great ulcer and the stomach was chilled and the stench upset them; and

although the thirst was intolerable, nevertheless no kind of drink was found that could agree with the stomach. In many the brain was infected to the point of vertigo in some even to the extent of insanity. Not only the hands trembled but even the feet and the whole body and the tongue contracted a stammering in some cases incurable. I have seen many perish in the midst of the treatment and I knew a certain man practicing this method who wretchedly murdered three farmers whom he had shut up in an overheated hot room and who in their eagerness for the health which they hoped they would get stood it more patiently than they should have until their hearts failed to such an extent through the violence of the heat that they did not know they were dying. I have seen others suffocate when their throats swelled so up to their jaws that there was no way out first for the poison which should have been thrown off in sputum and then even for the breath itself; some I have seen die because they could not urinate: altogether a few recovered, and these with such danger, such suffering, such misfortunes.

CHAPTER V: ON WHAT RESOURCES I HAVE RELIED IN THIS DISEASE

I myself, whenever I have been anointed, have used for the purpose of preventing what might happen to the mouth alum only which I held in the mouth rolling it here and there until it melted; but when it was necessary to give attention to bandaging ulcers and treating the joints I used plasters of herbs—absinth, camomile, hyssop pennyroyal vermouth, salvia, and the like—boiled in wine and water; but for the ulcers, on advice given by Eitelwolf, I formerly used an ointment which I compounded of alum, verdigris, the purest honey, and vinegar in equal parts, recently, as I learned from a common soldier in Italy, limewater which I prepared as follows: I boiled well water or pure river water in a vessel which had never had any other liquid in it and when it was boiling violently I poured it over living lime (that is, lime which no water had touched) in a basin or in a clean wooden tub never yet befouled; when the lime was thus first dissolved and then allowed to stand undisturbed and had settled to the bottom, I drew off the foam which was floating on the top without disturbing the lime and poured off the very clear water left between and put it aside for use. When I wanted to use it I absorbed it, sometimes as I could, most often warm, on a sponge or piece of cloth and treated the ulcers, washing them and wiping off the pus; then I put on a piece of the cloth thus moistened and bound up the ulcers; under the influence of this water the pains diminished and the swelling subsided, the wounds were cleaned and heat

and inflammation was prevented by something of a miracle since live chalk in other uses raises the temperature by the force of its own heat. I have never found anything that could be applied more efficaciously to these cases, and it seems to me that I turned aside impending disaster with the support of this one aid since even then the disease was raging most fiercely. I used cassia also to clear the stomach when I wished and I sweated myself not infrequently and I let blood, drawing it often with cupping glasses. Advised also in Italy that this had a marvelous efficacy, I used to eat in the morning resin of terebinth the size of a hazelnut: this they claimed relieved the impurities of the blood, how this is I do not know, and eased the stomach and helped the appetite, both of which I found to be true; they said also that it cured the sinews with no slight results and strengthened the joints. By these methods and at the same time by moderation in food and drink and by a thrifty life I escaped many things which might have finished me off traveling as I was so long and so unpleasantly, forced for the most part by poverty to endure many hardships and never in repose but always restless and disturbed. And this I accomplished that no sinew of mine has up to now been injured although my shin bones were eaten by such deep and malignant ulcers and that no bone has suffered degeneration, and that the disease has never attacked my face nor any harm reached my mouth or tongue and that my intestines have been preserved: for I kept the damage from my stomach and once in a great while protected my liver by other resources. But by these helps I could resist the disease but could not remove it: and this was to ease the suffering not to cut out the cause of it, to put off the disaster not to remove it; the more immediate remedy, nay the salvation, was from guaiacum alone to the description of which I have now turned my mind.

CHAPTER VI: DESCRIPTION OF GUAIACUM AND ITS DISCOVERY AND NAME

If the explanation of all things good and bad alike is to be looked for above, how much we owe to the gods for the benefits of guaiacum, and how much greater is the joy of this kindness than that cruel scourge! Its use was brought to us from the island Spagnola. This island lies in the west near America and furthermore in that part where America slopes off in length toward the north and was discovered with it in former years amongst the new lands unknown to the ancients. All the inhabitants of the island itself suffer from time to time from the Gallic sickness, as we do from the smallpox. And they use no other treatment against it. A certain Spanish noble when he was governor in the province and was sorely afflicted with the disease itself, shown the treat-

ment by the natives, brought its use to Spain, at first very fearful lest it might not have the same effect across the sea as in the island. The doctors would not recommend it, seeing only a loss to their income, until they actually pushed themselves into the business with such arrogance at once as to deny that any one could be restored who took guaiacum without their prescriptions. I marvel how they persuaded anyone of this when it was known that there were never any doctors in the island but that guaiacum had always been used there. But what business doctors should have in the matter of this treatment, I will speak of a little later. Now to the matter in hand. They gave the name guaiacum to it: for so the Spaniards in their own idiom with Latin letters took over what the islanders with a hiatus pronounce huiacum: for Paulus Ricius at Augsburg told me that he had heard from a Spaniard who had been in the island that the first syllable of the name was not pronounced gua by the people of Spagnola but that the tongue of his people required this inasmuch as what the Latins write so, they themselves pronounce not with a g sound but the sound of a u with a rough breathing, so that the pronunciation with them is likewise huaiacum a trisyllable and not guaiacum. We might give to it some magnificent name as Philo the doctor called his alexipharmaca "Deorum manus" and as today doctors with great boastfulness call their compositions "Manus Christi," "Apostolicon," "Gratia Dei," "Antidotum Paulinum," and such like, ascribing the names in superstition. They say it grows to the height of an ash with us, a smooth tree, and produces nuts like chestnuts. Its material is gummy. Its color is like boxwood but tending to black; and they consider that best in which there is the most black: but that which is box colored differs from that which is black in this way that the latter is inside, the former outside, or to speak more plainly, the marrow is black. The wood itself is very, very heavy; no smallest piece of it therefore floats in water but straightway goes under and sinks. In hardness it surpasses all oak. It is so very hard that it practically never splits; for I have never yet seen any with cracks in it and those who sell it say that it does not split. It burns and flames with a not unpleasant odor; as it burns there flows from it a gum of which we do not yet know the use; it is nearly black and as soon as it has fallen is very hard. The bark is not so very thick but immoderately hard. When these characteristics have been noted I do not believe it possible for those who fake it to escape the notice of the buyer: for who would be deceived by a slight differentiation of color in a thing in which all these points may serve as checks: the richness with a resinous odor, the weight such as no other tree has, then this gum which flows off as it burns, its hardness such that

it can scarce be cut, and the fact that even cut into small pieces it will not float in water, and the smell which once known will never allow of mistake? Nor is this odor unpleasant to all, to me it is even delightful. They say it does not last and a decoction of it in the summer gets mouldy after the third day, in the winter a little later. So the richest and the heaviest possible should be selected: for a mark of its age is lightness and thinness. From this description let the doctors if they will discuss in long dispute the reasons for its efficiency: I rejoice rather that it is than inquire what it is. Although I admit that they deserve much who first shall present to us its nature investigated in every respect. But now there are some who as though they had hunted down all the traces of the matter from these indications of its powers at once expound its cause: which I think is premature on their part, believing that in this matter as in all medicine in general the cause should be sought only after the discovery of the thing and the recognition of its use. But now about its use and about how it should be prepared for medicinal purposes.

CHAPTER VII: CONCERNING THE PREPARATION OF GUAIACUM IN MEDICINE

It is prepared in this fashion: the wood should first be broken into the smallest possible pieces: some do this on a lathe and then immediately moisten the shavings themselves; others first rub the shavings or pound them with a pestle, so as to reduce them to sawdust and powder, that they may be more permeable and the power cooked out: whether this makes any difference I do not know; I have seen men first cut it up with a saw, then rub the sawed off parts with a file, and finally mix the filings with water. But however done they mash the sawed off bits or the filed sawdust or the pounded powder to the amount of 1 pound in 8 pounds of spring or river water or, according to my practice, well water, for a day and a night, then cook it in slow heat in a new glass vessel carefully washed, over coals for more than six hours until it is reduced to one-half, with great care and constant watching lest it boil from too much heat; for what boils loses, they say, much of its power and is less efficacious. And for this reason it cannot be cooked over flame and needs only moderate coals and a vessel which it does not fill but which is one-third empty. The foam which floats during the cooking is drawn off and with it the sore is anointed for treatment: for we have found that it has a most efficacious drying power. When they have strained it off after this cooking they pour it into a glass bottle, then from the powder left behind mixed again with 8 pounds <of water> they cook a certain

sort of after-wine or must. This they give as a drink with light food before the other is drunk as a medicine; and so this whole matter which frees us from this so terrible disease is this decoction; this is the fountain head of the matter, this is the hinge on which our salvation turns. And not only does this not require the admixture of any other substance but as I will show a little later it does not allow of it. But some would insist that light and clear water be found for this process, others accept indifferently any sweet water because in the cooking any sort of water is purified. All believe that the watching of it during the cooking is necessary to see that it does not boil or effervesce and they urge that the vessel be well covered so that nothing steam off; the vessel is opened when foam is seen to form and when this is removed is closed again. As to their having it in glass that is only that it may be in clear view and all the more so because the glass is cleaned. The color of the decoction is that of water slightly disturbed with mud. A cloth wet with it turns marvelously green. The taste is somewhat acid to those who taste it for the first time, pleasant as you gradually become accustomed to it. The doctors have ventured to put honey into it, 4 ounces to the pound; this practice I do not criticize but I deny that it is necessary and I could wish that since it is unnecessary nothing should be added to a thing so valuable in itself: for what is the satisfaction in exerting effort when it is unnecessary? Nor is the taste of guaiacum so strong that it need be tempered with honey; more than that, if the doctors suffered it, it would not be unpleasant to any one. Yet why speak of doctors when we are talking of good-for-nothings: for those who are learned and skillfull like your Stromer, my lord (and mine too in friendship), and also like Coppus, himself, your secretary for medical affairs, as it were, these know how unsuitable it is to handle unknown substances by changing them or to add to those which have as yet shown no need of any addition. Just as your Stromer when we were discussing guaiacum at Augsburg and many had previously advised me to submit myself to this new cure and I had yielded to none on account of the novelty of the thing, after he had spoken many serious words about it in his customary manner, said that he was afraid that some useless addition by the ignorant doctors might bring into disrepute the salutary virtue of guaiacum; but that if this did not happen he had found by investigation that nothing could be more efficacious against this disease; and he persuaded me with no hesitation and with no delay to plunge headlong at once into the trial of guaiacum. Therefore I want this said sufficiently clearly once and for all that as often as I complain of the doctors in this treatise I am thinking of those who with no learning and no skill with only their

title and their purchased name of Doctor sell themselves to the crowd; who are ignorant alike of Greek and Latin literature, although in no profession is there more need of literature and education; who although they are most ignorant impose on the simplicity of the German, since no doubt comes into any man's mind about the learning of any one who is marked with the title of Doctor. Why say this in so many words? To defend myself before you, my lord, against those who, having noted this occasion, might denounce me to you as more stinging than was just. When they did this recently with regard to the lawyers and theologians against whose professions they said I inveighed too immoderately although I had attacked only the unlearned amongst them and those excessively bad and inimical and most bitterly hostile to the pursuit of literature, they brought it about that many good men considered me unjust to them although that were farthest removed not only from my character but from the practice which I followed. But since I know that you are not ignorant of this, I dismiss the ambulatory dispensers of ointment, the medical highwaymen, and those undoctored doctors; I return to guaiacum, whose use in medical practice is on this wise.

CHAPTER VIII: ON WHAT IS THE MANNER OF THIS CURE

The patient sits in a room as little as possible exposed to air, to say nothing of wind, where there is continuously a fire, or, as in Germany, in an aestuarium, not because it is always hot but only because it is protected from the air and closed so that no air may breathe on him at all during the whole time of the cure. Even the cold must be avoided: and so if any one makes the attempt in winter or in autumn he should take care to have a fire especially before dawn because the cold is most intense then; if there are any cracks around the windows they should be filled with plaster or chalk and curtains or tapestries should be hung over the door to the room inside and out so that no one entering or leaving may let in any air. When this is all arranged, the food is cut down gradually, first a quarter taken off from what he has been accustomed to eat, then a third, after a little a half so that he may learn to go hungry; and wine is given much diluted with water: then next his bowels are made to move by purgative medicine whether at choice such a dose is taken as is considered enough to remove the cause of the disease or to take away the matter that nourishes it, or simply such as may empty the stomach: for this alone I see is aimed at: that what is necessary for the cure may begin at once after this fashion: that first and stronger decoction is given him warm, one cyathus at a time in the morning at the fifth hour or near to it and at

night at the eighth hour: we call a cyathus a glass that holds one-half a pound: whence it can be seen that since 8 pounds of water are poured over 1 of the wood to make the decoction and since during the cooking one-half should be evaporated and four pounds be left and since there are two doses in 1 pound, therefore a decoction of 1 pound of guaiacum is sufficient for four days. For this has become a custom with doctors to measure liquids by weight and the names of the measures have totally disappeared. It is drunk rapidly without breathing spaces; after the draught the patient should rest for more than four hours, and for the first two he should be covered up so that with the help of the warmth as the medicine spreads through his limbs he may sweat off some poison; of what importance this is I will show in its proper place. Furthermore he is ordered to be covered up for warmth for a whole hour before he drinks. There are some who say that he should not rise from the bed sooner than five hours after he has drunk. Food is taken not sooner than midday, and as little as possible: for this treatment requires first of all an empty stomach: so food is to be taken not to fill this emptiness even in part but only to prevent death and sustain life, not to build up strength, and no danger should be feared in this for there is power in guaiacum to build up and strengthen but only in the case of empty stomachs. And absolutely they say that no one dies however little he eats if only he drinks this decoction faithfully. Meanwhile unless there are ulcers or wounds nothing is applied externally; for these a white ointment which they call crude, made of white lead and rose oil with camphor is applied on cloth. Some anoint with the foam alone or sprinkle this dried into a powder. And to be sure none of this decoction except the froth is applied externally. Some recover in a shorter time, some more slowly, the majority in thirty days. On the fifteenth day they order the bowels cleared again: for this reason I think, because, as Alexander of Aphrodisium believed, men who are fasting when the regular practice of eating is interrupted degenerate and they secrete a rather acid matter; and so by purgation whatever has been thus collected is removed so that the body of the patient may remain empty. And then he does not take his drink in the morning but returns to it directly at night and after that day food is taken more generously. And again on the twentieth day more freely; although both this "more generously" and this "more freely" ought to be very slight as I shall show in the following chapter. With this precaution in view some to prevent any interference thence with the operation of the treatment have held to one dietary rule for the whole thirty days alike; in general this relief helps more successfully and more speedily in proportion as one can

endure hunger more bravely. But the desire for food becomes more and more urgent day by day; each one must however remember to restrain himself, sure of recovery if he but do that: for so the decoction acts and the stomach emptied not only by starving but by sweating returns to the appetite for food and drink long practically dead because of the abhorrence of the disease for them. When the end of the treatment has been reached so that the patient is about ready to go out, he must take a purgative again but so that after the purge he drink the medicine as before for four or six days more. This they bid him add as a colophon, so to speak, to the treatment. Some prescribe that the room where the patient lies must not be left until the disease has been totally driven out and health restored. Others think that thirty days are enough for any one to be shut in; afterward he may go out, but cautiously and further and further, not immediately into the open but first should walk within doors from one room to another then to some neighboring house not very far off until he accustoms himself to stand the air; for nothing should be changed suddenly in this but he must gradually become accustomed to all. What is left of the disease after going out becomes well very quickly they say; and I have found this to be so in my own case: for when thirty days had gone by and the ulcers on my tibia had not all healed over I stayed in for another ten days and when these had gone by I had still however not recovered. Therefore because of fear of the cold since winter was beginning I decided to add still more days; but persuaded by the doctor to go out I chanced it; nor did it turn out badly although there were still ulcers, not deep to be sure or swelling but on the surface of the skin and which lacked only the covering of flesh; this last step I achieved with such difficulty that only on the fortieth day after my going out did the flesh completely cover them while in the meantime I made a journey with winter now severe from Vindelicum to France. I myself conjectured the reason for this delay to be the fact that with the permission of the doctor I had eaten more food than I afterward learned to be proper and that he had made the decoction weaker than he ought: for I used less than 5 pounds of the wood while others took 8 and some 10, the doctor being deceived in this because he saw that by nature my body was slender and also that it was emaciated by the length of my illness and so thought that too small an amount was sufficient to make the power of the disease yield. And for this reason he had distrusted too strong a dose since he feared that I might succumb to too great strength; with a twofold mistake: because he ought to have considered not what the condition of my body then was but what it ought to be and because the nature of this medicine is such that

it suffers no one to succumb. Therefore even to the very weak not less but somewhat more should be given for it never acts violently since the nature of its beneficience is to cure gradually. And therefore I approve more that decoction which has been longer on the fire and which comes out less in volume from a large quantity of wood; so I would advise that to make it more efficacious it be often cooked down to one-third. Furthermore if anyone should want to loosen bowels that are wont to be constipated, they bid him take in the morning in water a half ounce of the powder reduced from the guaiacum dust and if this should not move them they would have him repeat: even when repeated this did not work with me.

CHAPTER IX: ON THE DIET DURING THIS TREATMENT

About the diet there is still controversy. Some think that one should live on bread alone which Galen calls the simplest nourishment, with just a little watered wine, and of this they give 4 ounces without salt or condiment and they think in general all sauce should be abstained from except that they allow some chicken broth to be drunk or bread dipped in it to be eaten once a day: for in the evening they give nothing but watered wine and an ounce of bread. Others allow a half a chicken very tender (or if it is old a quarter) boiled in pure water and add no salt or condiment to it except that some put in sugar; but they give 3 ounces of bread; at evening, as before, watered wine with an ounce of bread. It must be strictly observed through the whole period of this treatment that the patient shall taste no salt at all. They approve wheat bread, white, of well sifted flour which those preparing it for this use savor with sugar which does no harm. There are some who add to this fare, not so much in the function of food as of medicine, a little borax, either the leaves only or, if there are any, the flowers which are eaten boiled down in water or as a vegetable with chicken. And some hold to this diet throughout; some think that fifteen days is enough; then they wish the hunger to be endured less extremely and on the twentieth day they give food twice: let them look to it who follow these; for surely this treatment requires this that the patient be reduced with the greatest starvation possible. Although some succeed in being wholly cured in fifteen days: nevertheless they have added some days after that of their own accord. They drink with their food of the second decoction, not warm but chilled. And this is the total of the fare: for beyond this measure no one has yet dared to go; although I would not scorn those doctors who argue in this matter that there will be danger for bodies of a dry and warm temperature if they are forced to this sort of diet,

citing Galen and Hippocrates, who in many places seem to be opposed to this extreme diet. But I have seen no one of those who have used guaiacum up to now endangered and I gather advice from experience not theory from books. Furthermore I am of a dry and warm temperature myself and this starvation did not give me consumption nor fever, which they seem to fear. But since it is not imprudent to think of all things in advance, I advise anyone who is worried about this to have doctors watch him. Let this be enough on this point so that I may pursue the rest. The patient ought meanwhile to lay aside all business, to have done with all serious thought, to rest from all worry. Wherefore they prescribe a rest from all consultations and studies, and the mind is bidden to be free from all internal activity, and to claim for itself a deep peace and to be relaxed from all confusions and cares, and especially from those which are of a melancholy nature. The patient must be on his guard against anger because that as Galen says especially excites bilious matter. Furthermore care must be taken that nothing comes up at this time that might arouse sadness. Let the patient listen to singers and musicians and give his attention to music or delight himself with pleasant conversations. Furthermore how decidedly sexual pursuits are to be avoided, I will show later. I myself sought pleasure by reading delightful things and even by composing them, though the doctors protested and would have been definite in their advice had they not believed me that while doing these things I was not doing business but pursued literature for the sake of pleasure not as a study, although I should not want this to be a precedent. Meanwhile the hunger grows severe, with some as soon as the end of the sixth day. I myself suffered nothing serious up to the tenth. The only comfort in this is not to see people eating, not to see food or to smell it. Nevertheless when any one seems to be going to give out through hunger, nourishment having been denied his body, I would not have him who would fortify him or restore his powers use food at once nor some exotic condiment, but rather rouse his failing spirit by bringing in from without some sweet smelling odors. Galen thinks that the vital and animal spirit is nourished and helped by smell; in this situation however consideration should be given to the nature of each patient so that similar things may not be applied to those of dry and warm complexions and those of moist and cool but things of a corresponding quality to those constituted either way. I myself, just as I approve in all matters things that are native as being akin to us, so after the precedent of Democritus who kept alive his failing spirit for three whole days by the smell of warm bread, I would think that one ought to seek support for failing powers by moving near to the face

either bread or a boiled onion (for in this too I have found that there is virture of this sort). It has also been found that the same may be accomplished by the smell of wine; for with this, as may be seen in Quintus Curtius, his doctor Philipp revived the listless Alexander and we see that its power in this direction was preferred to all else by the traditions of ancient doctors. Furthermore the spirit is to be nourished in every way by the sweet savor of smell because from the spirit is life: above all the odor of aged sweet wine is approved for this; then honey too and especially rose honey; likewise apples of which Stromer never ceases to advise me, saying that he has found out of what power and of what immediate help they are in this connection. Some prefer Persian apples, some Cydonian. Vinegar also is commended in a pickle of roses or mustard: for they say that these too affect the senses and build up the strength: but cinamon, nux odorata, commonly called muscat, styrax, lemon, saffron, gargyophyllus, musk, camphor and that sort of very expensive thing I leave to the more refined. Cummin, anise, coriander, spikenard, marjoram, roses, mint, rue, rosemary, violets salvia, castor, all native, none of the doctors who have evidence denies that these have the greatest potency and I frequently use resources of this sort with a great expectation of health. The patient may also use massage through all the period in bed, but mild massage which in this as in all cases I believe does the greatest good; and his head should be rubbed with warm cloths and combed with an ivory comb.

CHAPTER X: HOW THIS MEDICINE DOES NOT ALLOW OF MIXTURE

Furthermore this medicine does not suffer any admixture, which commonly astonishes those doctors who wish us to admire nothing except what is sought out from the three quarters of the globe and absorbs poisons, and who despair entirely of their authority unless in the mixing of their drugs they unite for us India, Aethiopia, Arabia and those farthest Garamantae; for what do they approve wherein there is no expense? And may almighty God bring it about that no advice of theirs be listened to about the use of guaiacum and that Stromer be accepted in this matter as a prophet, in my judgment a true one in his most prudent fear lest they ever lay hands on it. Besides let men believe me who have had experience that this medicine is sufficient to remove that ailment and that it is sufficient alone and that nothing more need be sought except what I have mentioned and that the bowels be purged at the beginning and again moderately on the fifteenth day and again at the end of the treatment; and that too with some simple medicine or one composed of not many ingredients. For I strongly suspect

that the doctors are consulting their own gain in this and not the health of men when they say that they must seek for something to remove the cause as if guaiacum did not do this. And it is an obvious proof that the purge is to be used for no other reason than to make the stomach empty that all the rest of the body is to be made empty by abstinence and starvation. What of the fact that in that barbarian land where guaiacum originates there are no doctors, no exotic plants, no canons, no aphorisms; but by chance the men there use some herb or root which purges the bowels and all use one thing alike: not to remove the disease but that with the stomach empty there may be an opportunity for the greater effectiveness of the guaiacum. Wherefore my advice on this matter is that in particular the stomach be not harried with any medical devices and to avoid especially those compositions made of several ingredients. With such obstinacy I allowed myself to be dosed simply with cassia alone although they offered many things eagerly and although I had been accustomed to drink not only that rabarbarum but whatever was more barbarous than rabarbarum. But the best result followed my plan: for I am not in these matters teaching what I have studied but advising what I have experienced: which I would have all remember that I say nothing here at random but am passing on to others as it were what I have learned at my own peril; and if I had learned anything else I would not suffer it to lie hidden; now therefore when I have with diligent investigation and studious search found out the power of guaiacum (which indeed if I have not properly understood, it is a mistake, but if I have learned it rightly I ask no particular reward or praise) I will faithfully pass on everything and this for the sake of this medicine that I may not seem ungrateful for such great benefits. And so I think this, that although many men otherwise in good condition are hurt by a variety of medicines and some even die, no help need be sought for this medicine from elsewhere, that it itself is sufficient for wiping out this disease; if anything is added, especially what is taken internally, it is not helped at all by this but that it may happen that it is hampered or vitiated. To this I would add that those who take guaiacum however they are affected, so absolutely do not need baths in this sickness that those who know its nature even forbid them to have their heads washed and allow the washing of the hands rarely and never in cold water.

(To be Continued)

ERYTHROSE PERIBUCCALE PIGMENTAIRE DE BROCQ*

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We have had under our observation for some time a small group of patients with a type of peribuccal pigmentation sufficiently different from the usual disorders of this area and of a sufficiently uniform character to warrant consideration as a distinct clinical entity. A review of the literature convinced us that the disorder in question is identical with that described by Brocq [1] in 1923 as erythrose peribuccale pigmentaire, so we adopted his title. Our patients were all women in the thirties or early forties. The condition absorbed a disproportionate amount of their attention on account of the cosmetic disfigurement and the extraordinary resistance to treatment. It was observed only in private patients, and we found it impossible to secure a biopsy from this region of the face. Consequently, our study is purely clinical, unsupported by histologic evidence.

The disorder consists of a diffuse brownish or brownish-red pigmentation, most marked about the mouth and extending over the chin and along the nasolabial folds as far as the forehead. It is bilaterally symmetrical and definitely outlined at the lateral margins. The intensity of the discoloration varies greatly from day to day and even from hour to hour, but the outline of the area involved alters remarkably little over periods of months and years.

In two of the cases there is a history of burning and stinging in the area for a short time after the onset, but in general there is a lack of subjective sensations.

The condition in all instances is of several years' duration. We have had no opportunity to observe its onset, but in one instance it was described by the patient as dramatically sudden, following the application of a beauty clay. In the others its onset was probably more gradual. Aside from the daily and hourly fluctuations in intensity, the course is remarkably uniform. The area involved and the line of demarcation vary little from year to year.

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1. Brocq: Presse méd. **13**:627, 1923.

REPORT OF CASES

CASE 1.—*History.*—A matron, 42 years of age, of American stock, presented a pigmentation of the central portion of the face, which she stated appeared suddenly seven years ago following the application of a "beauty clay." It changed little in the intervening period. She thought that she remembered some burning sensation in the involved area for the first few months.

The central third of the face was a diffuse yellowish brown, which was most marked about the mouth and in the nasolabial folds; this extended upward to the central third of the forehead and down over the chin to the neck, where it shaded imperceptibly into the normal skin. Laterally, however, it was sharply demarcated from the normally colored skin. The palpating finger could detect no change in the texture of the pigmented skin. There was no scaling. The openings of the sebaceous glands were a trifle more patulous than in the contiguous area. There was a slight excess of oily secretion. On heavy pressure with the diascope, a great deal of the color disappeared, but a yellowish tint remained, which was well demarcated at the margin. There were a few telangiectases over the malar regions and scattered through the pigmented region. There were no other skin lesions.

The patient had flushed easily since girlhood. When the cheeks were flushed, the contrast between the normal and pigmented skin was not so striking. One also received the impression that there were considerable and frequent variations in the intensity of the pigmentation, but no cause could be ascribed for these changes. For the period of observation, three years, the clinical picture remained essentially unchanged.

There was nothing of importance in her heredity. Her medical history, however, is interesting. Evidently she was an enigma on more than one occasion. She had suffered several attacks of choroiditis of the right eye in the past fifteen years. She was studied intensively by Dr. Ernest Irons and Dr. E. V. L. Brown for this complaint. Several negative Wassermann tests on the blood serum and one examination of the spinal fluid, which was also negative, were made. She stated that injections of a catarrhal vaccine would rapidly clear up an attack of choroiditis.

Six years ago she became "bilious," that is, she belched a great deal of gas, felt sleepy and suffered from precordial distress and palpitation. While under the care of a competent internist, who made a tentative diagnosis of gallbladder disease, a palm-sized bluish discoloration developed over the right ankle, and was followed by pain and tenderness over the large joints. She had suffered more or less from multiple arthritis since that time, and had had one attack of biliousness a year before she consulted us. She was studied in two nationally known clinics. All the usual laboratory tests were performed, with no definite observations to account for her complaints. She had been married ten years and had never been pregnant. Her menstrual history apparently was normal. Her weight had varied little for many years.

Examination.—The patient was a well developed woman, 5 feet 7½ inches (171.5 cm.) in height and weighing 156 pounds (70.8 Kg.). Aside from the facial pigmentation, she appeared to be in good health. She was somewhat nervous, and flushed easily. She was not abnormally depressed by her disfigurement, although she was anxious to cooperate in any attempt at its solution. There were no anomalies of structure. Her hair growth and vital organs were normal. The blood pressure was 125 systolic and 78 diastolic. There was a slight tremor of the extended fingers, but no other evidence of hyperthyroidism. The basal

metabolic rate was within normal limits. The results of examinations of the blood, spinal fluid and urine were negative.

Treatment.—Various types of local therapy, both soothing and stimulating, were tried with no results. Endocrine gland therapy and injections of gold sodium thiosulphate were unavailing. Roentgen therapy was not advised, for we feared it might exaggerate the pigmentation already present.

CASE 2.—*History.*—A Jewish matron, 40 years of age, presented a pigmented condition of the peribuccal region of three years' duration. The onset was gradual. The area looked "chafed," that is, somewhat scaly, and was somewhat itchy. Gradually, a well defined line of demarcation appeared between this area and the normal skin of the cheeks. Her face had always been sensitive to soap and water, the use of which seemed to aggravate the discoloration. Consequently, since its onset she had constantly used creams and oils for cleansing. She was distressed by her condition, and devoted an inordinate amount of attention to it. She was of a sensitive type and easily worried.

The discoloration was similar in extent and location to that described in case 1, except that it did not involve the forehead, and the color had a more reddish tone. Under the diascope a yellow color persisted. The texture of the skin was similar to that described in case 1. There were the same patulous sebaceous orifices with excess of oil, with the same sharp line of demarcation from the normal skin of the cheeks. There were a few fine telangiectases on the chin. In contrast to case 1, there was no history of flushing of the cheeks, but the intensity of color in the involved area varied frequently.

While this woman was under observation, small patches of an erythematous papular dermatitis developed from time to time in the preauricular areas, on the temples and on the chin. These were of the type usually designated as seborrheic dermatitis, were not associated with any demonstrable irritant and were relatively transitory. For approximately three years she had also been subject to what she described as "hives." These were pinhead-sized, bright red papules, with an inflammatory areola. They were extremely itchy and lasted only a few hours. Originally, these occurred on the trunk and on the face, but later were confined to the face and were not as numerous or as frequent as formerly. They were apparently aggravated by the administration of pilocarpine. True wheals had never been observed, but they may have preceded the papules. For the last three years, at intervals of six months, she also had had what appeared to be a recurrent herpes simplex in the right groin. When she consulted us only pigmented relics remained.

The only significant features in her medical history were in connection with her sex life. She was married eighteen years ago. Her first pregnancy terminated in dystocia, with a stillborn child following delivery by high forceps. She had one daughter 12 years old, who was apparently well. Since the last pregnancy her menses had been painful, profuse and somewhat irregular. Coinciding with the onset of her facial discoloration, her menses became so irregular and so profuse that she concluded that she had entered the menopause. She was under the care of a gynecologist. In October, 1928, she was curetted, and a cervical amputation was performed. Severe hemorrhages occurred, and in February, 1929, a hysterectomy was performed. During the past year she had had hot flashes and other evidences of the menopause. She gained in weight from 125 (56.7) to 137 (62.1 Kg.) pounds. Her gastro-intestinal history was negative.

Examination.—The patient was well developed, 5 feet, 1 inch in height (155 cm.), with a tendency to obesity. She weighed 137 pounds. She presented

no anomalies of hair growth or bodily structure. Aside from the changes following hysterectomy, there were no gross changes of the vital organs. Her blood pressure in July, 1927, was 134 systolic and 84 diastolic. When examined it was 130 systolic and 80 diastolic. There was no evidence of thyroid disturbance. Her basal metabolic rate was normal. The Goetsch test was positive, i. e., subcutaneous injection of 0.5 cc. of 1:1,000 solution of epinephrine (Parke, Davis and Company) caused a rise in blood pressure, sensations of weakness and shakiness, which persisted for several hours and also caused a sensation of precordial oppression. The subcutaneous injection of one-twentieth of a grain (0.003 Gm.) of pilocarpine hydrochloride caused a depression of pulse and blood pressure. Fifteen minutes later she felt hot and weak and complained of epigastric distress; she perspired freely. In a few minutes, she felt normal. The administration of tincture of belladonna by mouth caused no symptoms. The Wassermann reaction of the blood was negative. Urinalysis gave a negative result.

Treatment.—Previous to the hysterectomy, she showed the same lack of response to all therapy as did the patient in case 1. After her operation she made a moderate improvement, although she used no treatment for the condition of her skin. Recently filtered roentgen therapy has seemed to influence the condition favorably.

Case 3.—*History.*—A Jewish matron, 32 years of age, presented a light brown pigmentation similar to that described in cases 1 and 2. This was present for nine years. In this instance, however, the pigmentation at its lateral margins was reticular, with islands of normal skin 3 mm. across. In the skin of adjacent portions of the cheeks there was a similar reticulum made up of slightly telangiectatic vessels, which fused imperceptibly with the pigmented network. Viewed from a distance, the margin was relatively distinct. The same patulous sebaceous orifices and excessive oily secretion was present as in the other cases; with the exception of a small area of dermatitis on the chin, there was no evidence of infiltration or scaling. The skin was always sensitive to outside irritants. The cheeks and exposed areas of the chest flushed easily and frequently. There was great variation also in the intensity of the pigmentation. She felt certain that it was more marked before menstruation.

With the exceptions to be noted, there was little of importance in her family or personal history.

Her sex history presented features of significance. The menses had always been scanty and irregular since the onset at 13 years of age. She was married thirteen years before we saw her, and one year later delivered a child which lived only three days. She did not menstruate for one year. Since then the menses appeared at intervals of from two to six months and were very scanty. She was never pregnant again. During the past six months she had a moderate leukorrhea.

Ten years ago she was seized with a sudden, severe abdominal pain associated with menorrhagia and abdominal distention. She was taken to the hospital, where she was confined for one month; a diagnosis of peritonitis was made, but no operation was performed.

She had always been constipated, but gave no history of indigestion. Recently she had tired easily, and had been short of breath on exertion.

Examination.—The patient was a stockily built woman of somewhat masculine habitus. She had a well developed hypertrichosis of the face and a masculine type of hair growth on the chest and extremities. She was 5 feet, 6 inches (167.6 cm.) tall, and weighed 161 pounds (73 Kg.). There was a moderate, diffuse hypertrophy of the thyroid gland, but none of the clinical signs of hyper-

thyroidism. The heart was normal in size and outline, and there were no abnormal sounds. The pulse rate was rapid, i. e., 90, but regular. One year before examination her blood pressure was 210 systolic and 100 diastolic; at the present examination it was 162 systolic and 85 diastolic. Vaginal examination disclosed a small, retroverted uterus. There was a moderate amount of tenderness over the right tubo-ovarian region. The uterus seemed to be adherent posteriorly. There was some evidence of old lacerations of the cervical region and a moderate degree of endocervicitis.

The Wassermann reaction was negative; the basal metabolic rate was reported as abnormally high in 1926. At that time a thyroidectomy was suggested by an internist. At present the basal metabolic rate is 4 plus. The Goetsch test was negative.

COMMENT

Two elements enter into the pathology of this disorder. The first, a variable factor, is a disturbed vasomotor tone of the peripheral blood vessels in the involved area. There is a certain amount of permanent vasodilatation with the possibility of frequent and marked variations in intensity. This accounts for the disappearance of a large amount of the color from the diseased areas as seen under the diascope. Just as in acne rosacea, this factor is under the control of the autonomic nervous system and is influenced by any disturbance in the endocrine gland functions, as well as reflexly by disorders of the gastro-intestinal tract. Brocq [2] stated that this disorder is not so much a disease as a condition dependent on a disturbed state of the circulatory and nervous system, in which dysfunction of the endocrine glands and the gastro-intestinal system plays an important rôle. He found in this fact an explanation for its extreme resistance to topical applications.

While no definite diagnosis was ever made in case 1, there was a great deal of evidence to suggest cholecystitis. In case 2, the appearance of the facial pigmentation coincided with a definite disturbance of the sex function, that is, menorrhagia, which finally became severe enough to warrant hysterectomy. Following the menopausal disturbance, there was some spontaneous improvement in the facial condition. The Goetsch test and the response to the injection of pilocarpine demonstrated a marked irritability of both the sympathetic and parasympathetic divisions of the autonomic nervous system. In case 3, endocrine dysfunction was evidenced by the masculine habitus and abnormal hair growth. The female sex hormone was evidently under-developed. There was failure to give birth to normal children, scanty and infrequent menses and an atrophic condition of the uterus. What part this disturbance played in the production of the abnormally high blood pressure is difficult to state.

In the first and third cases, there was marked instability of the vasomotor tonus of the face and exposed part of the chest, evidenced

2. Brocq, L.: Bull. Soc. franç. de dermat. et syph. **5**:339 (May) 1927.

by pronounced flushing in these areas on little or no provocation. This in itself is frequently an evidence of hyperirritability of the sympathetic nervous system.

The whole face flushes and pales, but only the center remains permanently discolored, and that in a rigidly defined area. This is explained by the presence of a second or static factor, which causes the residual yellowish discoloration under the diascope. This is most likely an inflammatory element due to an infiltration in the corium. It is interesting that the histologic studies of Milian and Civatte support this clinical impression. Milian [3] studied the histology of this disorder in a patient who was also syphilitic. He found endovascular changes and a perivascular infiltrate of the papillary vessels. This condition cleared up under antisyphilitic therapy. Civatte [3] was surprised to find in his cases a more marked change in the epidermis than one would suspect from the absence of scaling. He also found changes in the corium. Neither author described any special increase in melanin.

DIFFERENTIAL DIAGNOSIS

Erythrose peribuccale pigmentaire occurs in the kind of skin predisposed to inflammations of a seborrheic nature. In this area there is an exaggerated seborrheic flux, and the orifices of the sebaceous glands are patulous. Juster associated the deepening in color in this disorder with an increase in the flow of sebum in the involved areas. Papular dermatitis of a type usually designated as seborrheic occurred in case 2, both on the cheeks and in the pigmented area. These lesions are relatively transitory, poorly defined and are amenable to treatment with topical applications. It is difficult to account for the sharp demarcation, the extreme persistence and the exact symmetry of the pigmented area on the grounds of a seborrheic dermatitis of the usual type, especially in view of the resistance to all treatment. Whether the condition is secondary to the vascular dilatation is a question.

Without doubt, this disorder is closely related to rosacea. It is well known that rosacea may occur solely as a vasomotor disturbance, without folliculitis. Recurrent congestion of the flush area of the face may terminate in a permanent erythema due to vasodilatation. Doubtless, the labile congestive element in this disorder is of a similar nature. This vasomotor instability is associated with digestive and endocrine disturbances in both instances. However, there is also present another static factor, a pigmentation with its well defined unchanging borders, a marked symmetry and extreme resistance to all therapy.

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3. Milian, G., and Civatte, A.: Bull. Soc. franç. de dermat. et syph. **8**:733 (Nov.) 1927.

It is interesting to note that a diagnosis of vitiligo was made in case 2 by a competent dermatologist who saw the patient in consultation while she was hospitalized for a surgical operation. The contrast between her cheeks and the hyperpigmented central area was so sharp as to warrant this diagnosis in his opinion. However, her cheeks tanned normally in the summer sun. There were no other areas of depigmentation. This fact and the extreme symmetry of the disorder make such a diagnosis untenable.

From the cosmetic pigmentation described by Goeckerman, from Civatte's poikilodermie reticulée pigmentaire du visage et du cou, from the various facial pigmentations due to chemicals activated by light, from Poor's chloasma periorale virginum, as well as from other types of chloasma, the present disorder may be distinguished by its variations in intensity and by the fact that the pigment is very much less marked under the diascope.

Goeckerman,[4] in 1922, described a brownish-gray or slate gray pigmentation of the eyelids, the nasolabial folds, the chin and the folds of the neck occurring in two young women following the use of proprietary face creams containing mild mercurous chloride. In 1925, he[5] was able to record thirteen more cases, all women, together with a histologic study of one. The pigment was distributed throughout the corium and subcutis in the form of granules, which probably were composed of mercuric oxide.

The site of the pigmented areas in Goeckerman's cases is similar to that in ours. However, since the cheeks and sides of the neck are usually most vigorously massaged in the application of face cream, they are apt to be more markedly involved than the area about the mouth. Cosmetic pigmentation has a gray or slate color which simulates the appearance of a dirty or unwashed face. The reddish tinge of erythrose is absent. Goeckerman described minute puncta in the glandular openings, which are never present in erythrose. There is no marked daily or hourly variation in intensity. Finally, under the diascope the major portion of the pigmentation persists.

In 1923, Civatte[6] described three cases of mottled pigmentation of the face and neck involving in one instance the upper extremities, which he found associated with a slight degree of atrophy. He named this disorder, poikilodermie reticulée pigmentaire du visage et du cou. Graham Little[7] reviewed two similar cases which he had shown in

4. Goeckerman, W. H.: A Peculiar Discoloration of the Skin, J. A. M. A. **79**:605 (Aug. 19) 1922.

5. Goeckerman, W. H.: A Peculiar Discoloration of the Skin: Supplementary Report, J. A. M. A. **84**:506 (Feb. 14) 1925.

6. Civatte: Ann. de dermat. et syph. **10**:605 (Oct.) 1923.

7. Little, G.: Brit. J. Dermat. **40**:231, 1928.

1920, without a diagnosis, before the British Society of Dermatology, and added nine more. He minimized the atrophy, but believed that Civatte's poikilodermie, as he chose to call it, is a distinct entity and involves characteristically the cheeks, temples, sides of the neck, the orbits, the forehead and only exceptionally the area about the mouth and the nasolabial folds. As the name indicates, the pigmentation is typically reticular, and all but one of the patients were women. Civatte's poikilodermie occupied the areas spared in our cases, was ordinarily much more extensive, more irregular in distribution, and was typically reticular. There was also no diminution of the color under the diascope.

Poor, in his textbook on dermatology, reported a special type of chloasma uterinum, which he termed chloasma periorale virginum. His associate, von Verde,[8] added a new series of these cases which are characterized by pigmented macules about the mouth, occasionally spreading to other parts of the face, appearing in young virgins and associated with ovarian dysfunction. They are resistant to all treatment, last for years, and often disappear spontaneously. This type, like the other forms of chloasma, is distinguished by its lack of variation and by the fact that the pigment remains unchanged under diascopic pressure.

SUMMARY

A short series of cases with a type of pigmentation first described by Brocq as erythrose peribuccale pigmentaire has been analyzed. This condition is due to a combination of two elements: a vasomotor and an inflammatory element. There is probably no actual increase in the deposit of melanin. The disorder is extraordinarily resistant to treatment. There is some evidence that it is dependent on endocrine and digestive disturbances.

ABSTRACT OF DISCUSSION

DR. HOWARD J. PARKHURST, Toledo, Ohio: I wish to thank the authors for calling our attention to this peculiar dermatosis. Unfortunately, I did not see their cases, but from time to time in the past I have seen cases that have been similar, although perhaps not identical, which I have considered to be a form of chloasma. In fact, it was my impression that this condition in its milder forms is not uncommon. Several of my young women patients with seborrhea or acne have complained of a café au lait mottling around the mouth, no roentgen treatment having been given. In a search of the literature, I found von Verde's recent article on the perioral chloasma of virgins, and this condition, as originally described by Poor, seemed to correspond with my observations. The pigmentary erythrasma of Brocq, described today, resembles this condition markedly, and I wonder whether the conditions may not be practically identical. The location is the same, and also the color, except a degree of erythema and a tendency to flush found in Brocq's cases, which would account for the fading of the color

8. von Verde: Arch. f. Dermat. u. Syph. **159**:56, 1930.

under the diascope. Brocq observed that the color varied in intensity from day to day and from hour to hour, and Poor noted that it deepened during menstruation.

Both diseases are chronic and resist treatment, eventually disappear spontaneously, and occur in seborrheic young women, many of whom show endocrine abnormalities. The only apparent variation is in the difference in age and in the degree of erythema, and it has not been proved that the erythema precedes or causes the pigmentation. Of course, in differential diagnosis, the strikingly similar pigmentation following roentgen treatment must be ruled out.

Dr. Fred Wise, New York: I should like to inquire whether the essayists have encountered similar skin changes in the male sex. I have in mind a patient, a physician, whom I asked Dr. MacKee to see with me. He had the same type of pigmentary changes, but instead of being perioral, the pigmentation was chiefly in front of the ears and on the forehead. It consisted of well defined, yellowish plaques on an erythematous base, which persisted and did not change for ten or twelve years. I have an idea that similar changes might be found in the male, and that they are just as hard to explain as those described by Drs. Ormsby and Ebert.

Dr. Oscar L. Levin, New York: Several years ago I had a patient, a woman, aged about 30, unmarried, who presented the same definite brownish pigmentation about the mouth, chin and to a less degree on the nose and the middle of the forehead. She showed distinct evidence of disturbance of the endocrine and vegetative nervous systems. Thyroid extract was administered, and about two years later she was presented again, when there was an almost complete disappearance of the pigmentation. I think these patients should be treated with endocrine gland extracts and measures taken to improve the vegetative system.

Dr. Everett S. Lain, Oklahoma City: I wish to ask Dr. Ebert to discuss the differential diagnosis, particularly in connection with rosacea and chlorasma. I can understand in certain early cases of lupus erythematosis that the diagnosis might be questioned, since biopsy is not advisable on the face. I think it is likely that I have seen one or two such cases, although I was unable to make a diagnosis.

Dr. Samuel C. Ayres, Jr., Los Angeles: I wonder whether this represents the same type of disorder that I have seen in the last few years due to *Demodex*. Of course we know that this parasite is present in the sebaceous glands of practically all adult skins. I have had twenty cases or so of this disorder, not all with pigmentation, however. Some patients complained only of flushing and burning, but in most of them one could see the small scales. If these are picked off with a forceps and examined under potassium hydroxide we can find *Demodex*. All of my patients have been women, and all were private patients. In one or two instances they complained that the face was so sensitive that they could not use water and had resorted to cleansing cream entirely. I have had good results with an ointment similar to that used in scabies, which I hesitated to apply in the first case. Three nightly applications, however, and then two or three applications a week for a few weeks has led to the disappearance of both the eruption and *Demodex*. The most frequent areas affected with pigmentation were the forehead, lower part of the neck and the skin behind the ears. I wonder whether this is not the same type of disorder that the essayists have described.

Dr. M. W. Rubenstein, Pittsburgh: Since Goeckerman's work on pigmentation caused by lead in some of the face creams on the market I have seen some cases in which the clinical description seems to conform very well. One patient was a woman about 25 years old who complained of a sudden onset of

pigmentation, which she attributed to the application of veterinary white lotion. I attributed it to the silver in the lotion combined with the face cream that she had been using.

Dr. Clark W. Finnerud, Chicago. I have had an opportunity to watch these patients throughout the course of the disease. I will not go into the differential diagnosis, but I believe the disease is an entity and easily differentiated from Ayres' disorder, Goeckerman's erythema and other conditions, for the reasons brought out by Dr. Ebert in his description of the disorder.

Dr. Michael H. Ebert, Chicago: The question of the differential diagnosis of erythrose peribuccale pigmentaire from all the disorders mentioned is taken up in the body of the paper. It was impossible to go into this today on account of lack of time. In general, the distinguishing features of this disorder are the frequent fluctuations in intensity of the discoloration and the disappearance of a considerable amount of the color under diascopic pressure, leaving a residual yellowish color.

In answer to Dr. Wise, we have not seen the disorder in men, but it has been reported by French writers as occurring in the male.

THE VIRULENCE OF SPIROCHAETA PALLIDA IN CULTURE *

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The problem of the cultivation of a virulent *Spirochaeta pallida* is still in a state of utmost confusion. Erich Hoffmann,[1] with whom Schaudinn [2] discovered *Spirochaeta pallida* in 1905, recently concluded that "The problem of a simple and reliable culture method remains to be solved." He also expressed the opinion that a differentiation of *Spirochaeta pallida* from morphologically similar types (which he offered to designate as "*Spirochaeta pseudopallida*") demands further study.

Volpino and Fontana,[3] as early as 1906, were the first to attempt to cultivate the organism. The literature nevertheless remained small and inconclusive, as a method devised by one worker almost invariably fails in the hands of another. The only proof for the existence of *Spirochaeta pallida* in a certain culture is a successful transfer of a pure culture to a susceptible host and its repetition. A few investigators claim with their culture materials to have reproduced the disease in animals. This, however, could have been accomplished only in sporadic instances.

OBSERVATIONS

Since the autumn of 1927, we have been engaged in a study of this problem, and in October, 1928, the Committee on Research in Syphilis, Inc., granted us a stipend to continue our investigations on a larger

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* Read before the Section on Dermatology and Syphilology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Hoffmann, E., and Hofman, E.: Handb. d. Haut- u. Geschlechtskr., 1927, vol. 15, pt. 1, p. 87.

2. Schaudinn, F., and Hoffmann, E.: Vorläufiger Bericht über das Vorkommen von Spriochaeten in syphilitischen Krankheitsprodukten und Papillomen, Arb. a. d. k. Gsndhtsamte. **22**:527, 1905.

3. Volpino, G., and Fontana, A.: Einige Voruntersuchungen über künstliche Kultivierung der Spirochaeta pallida (Schaudinn), Centralbl. f. Bakteriol. **42**:666, 1906.

scale. It is beyond the scope of this paper to discuss the approximately 100 different mediums employed and the results obtained in more than 400 animal inoculations. We desire to mention only a few mediums in the use of which we believe that we observed a multiplication of the spirochetes. The time-honored medium of Schereschewsky[4] (horse serum heated to the point of gelatinization, but still clear and incubated at 37 C. for three days) failed in our hands. Schereschewsky advised us to use serums from different horses, but we were not fortunate enough to find a suitable one. However, pooled human serums prepared according to Schereschewsky's method yielded more encouraging results. Similar observations were secured with rabbit and sheep serums with or without pieces of sterile rabbit kidney or testicular tissues.

The majority of investigators employed chancres or moist papules for their primary cultures, thus using surface lesions, which are likely to contain saprophytic spirochetes besides *Spirochaeta pallida.* This danger can be avoided only by the use of materials from the depth of tissues. On account of this, we decided at first to use lymph nodes from patients who showed early manifestations of syphilis. Material of this kind is not frequently available, thus rendering cultural experiments on a large scale troublesome. Even in these nodes we saw spirochetes that did not impress us as true pallida, and the general or local anesthetics required might have affected the organisms. Later on we transferred the disease to rabbits. Syphilis in the rabbit is almost as well known as that in man. Material rich in spirochetes and relatively pure may thus be obtained at will. Great care was taken to examine all the animals previous to use in order to eliminate the introduction of rabbit spirochetosis. Not a single case of this disease was encountered in our stock.

In all our cultural experiments, rabbits showing typical syphilitic orchitis were sacrificed by a blow on the neck, and the testis or testes involved were removed under aseptic precautions. Animals showing chancres or abrasions of the skin were excluded. The edematous testicular and periorchitic tissues (the latter often being of a cartilaginous consistency and of a thickness of about 0.5 cm.) were cut into pieces the size of a pea, and the extruded juice was observed by dark-field examination. The pieces were then placed on or near the bottom of the culture tubes. We used agglutination tubes for this purpose. As the mediums were broken up by the implantation of the material, we centrifugated the tubes to remove all air. The tubes were sealed with yellow petrolatum. Usually from sixteen to twenty-five tubes were

4. Schereschewsky, J.: Züchtung der Spirochaeta pallida (Schaudinn), Deutsche med. Wchnschr. **35**:835 (May 13) 1909; Weitere Mitteilung über die Züchtung der Spirochaeta pallida, ibid. **35**:1260 (July 22) 1909; Bisherige Erfahrungen mit der gezüchteten Spirochaeta pallida, ibid. **35**:1652 (Sept. 23) 1909.

inoculated with the material from one animal. After from three to five days the first examinations were made. A drop or two of the medium was aspirated with a Pasteur pipet a few millimeters from the tissue and observed by dark-field examination. No organisms of certain strains could be recovered on any medium. Others, however, showed on the serum mediums mentioned up to five organisms per field. At the end of from two to three weeks as many as from ten to twenty organisms (per field) were observed in some tubes. These occurred for the most part near the implanted tissue, although organisms were also found in other parts of the medium. A number of the spirochetes appeared typical in form; others appeared stretched and coarse. Their motility was markedly decreased, and many of them, although well shaped, appeared nonmotile. Y and V forms were also frequently seen. The greater number of our cultures were pure. When the medium was badly contaminated or liquefied, spirochetes were rarely seen. From

Summary of Experiments on Virulence

	Number of Rabbits Used	Number of Rabbits Developing Syphilis	Average Incubation Period, Days	Percentage of Rabbits Developing Syphilis
Direct transfers	29	23	28	80
Cultures from 1 to 3 days old	31	10	53	32
Cultures from 4 to 7 days old	24	0	0	0
Cultures from 8 to 80 days old	23	0	0	0

cultures in which we believe that there was a multiplication of the organisms, subcultures were made on the same mediums but with little or no success. In the second or third generations only a few living (motile) organisms were seen.

More important than the possibility of continuous transfer was to us the question of virulence. Our first experiments were conducted by giving groups of from two to six rabbits intratesticular injections of about 1 cc. of the mediums containing well shaped, actively motile spirochetes. The age of the cultures in this early series varied from ten to eighty days. Not a single animal developed syphilis. This observation forced us to determine the length of time our cultures retained their virulence. These experiments are recorded in the accompanying table.

In this series also, only rabbits with typical orchitis were killed. About one third of the testis was minced and ground with a few cubic centimeters of saline or normosal in a sterile mortar, passed through several layers of sterile gauze and the suspension containing several spirochetes per dark-field (from about two to three) injected intratesticularly usually into four rabbits, as a control for the subsequent experiments. The remainder of the testis was divided into portions,

some of which was planted in culture mediums and some placed in a moist chamber in the refrigerator. The pieces that were cultured were removed after an incubation of from one to seven days, ground up and injected into new rabbits. In each instance one of the pieces from the same testis that had been in the moist chamber or in a like medium in the refrigerator for the same period of time was inoculated also into a series of rabbits as control. At times only mediums containing spirochetes were injected.

Cultures kept in the incubator retained their virulence for forty-eight hours, while testicular material in the refrigerator remained virulent for seventy-two hours. The percentage of takes dropped from eighty in the controls to thirty-two, following inoculation of these materials into the testis. The incubation period was doubled.

Three strains were used, namely, our own strains L (from a case of chancre of the lip), one from a moist papule in the axilla and the Nichols strain. Furthermore, only the cultures showing actively motile spirochetes and occurring in apparently increasing numbers were employed. We had the impression that the organisms with a typical corkscrew shape were more likely to be virulent than those showing a wavy or beaded appearance. Contaminated cultures resulted at times in abscess formation. All of the inoculated rabbits were examined at least once a week, and the testes were carefully palpated for an inflammatory nodule or nodules. Positive observations were then confirmed by dark-field examination, as well as by transfer to normal rabbits. A number of our animals showing negative results were killed at the end of 100 days, or more, and their popliteal nodes were ground up and transferred to new rabbits in order to safeguard, as well as we could, against the existence of a silent infection (Nuller). Some of our animals died of intercurrent infections.

COMMENT

We hesitate somewhat to interpret our observations. The fact that we observed in some cultures first a few and later as many as twenty spirochetes per dark-field points to a multiplication of the organisms. On the other hand, it is known that the spirochetes in syphilitic tissue temporarily multiply after removal of the tissue from the host, and this fact, coupled with our failure to subcultivate the organisms, leads us to take a more conservative attitude. We think that the organisms found in the mediums may have been due to migration from the implanted tissue, although the probability of multiplication and growth must be considered.

These experiments, then, considered from the point of view of migration, become endowed with some practical significance. Following

the death of a host, the virulence of the organism rapidly decreases although under certain conditions motile and morphologically typical organisms can be maintained for many weeks. These facts explain the rarity of infection among pathologists. In 1926, E. Hoffmann [5] collected not more than sixteen cases of this kind from the literature and from his own experience.

There are few reports that are similar to ours. Shaffer [6] recently was able to infect rabbits with testicular materials up to one week after removal of the testis from the animal. His results might be explained on the basis that he used the Nichols strain, which is highly virulent for the rabbit, while most of our experiments were carried out with strains that had undergone only a few animal passages. Lacy and Haythorn [7] recovered virulent spirochetes from a stillborn infant twenty-six hours after birth. We saw actively motile spirochetes in superficial ulcers from a stillborn infant about forty-eight hours after birth, but these organisms could not be successfully transferred to rabbits. Zurhelle and Strempel [8] found that the spirochetes retained their virulence in syphilitic tissue for three days and seventeen hours. It is to be understood that these results cannot be directly applied to the human being, since man is more susceptible to this disease than the rabbit.

CONCLUSIONS

1. Seventy-two hours following the removal of syphilitic tissues from the host, spirochetes which may be morphologically typical and motile failed to infect rabbits when inoculated intratesticularly.

2. Similarly, in certain mediums (gelatinized human, sheep and rabbit serums) typical and motile spirochetes were observed for a period of weeks and months, but they failed to grow in subcultures.

3. These cultures also, even if they retained their morphologic characteristics and motility, did not retain their virulence for rabbits for more than forty-eight hours.

4. There is no parallelism between motility and virulence.

5. At present no reliable culture medium is known in which virulent spirochetes can be successfully grown.

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5. Hoffmann, E.: Ueber Syphilisinfektion mit Leichenmaterial und eventuellem Schmarotzertum der Spirochaeta pallida, München. med. Wchnschr. **73**:185 (Jan. 29) 1926.

6. Shaffer, L. W.: Cultural Methods for Increasing the Number of Spirochaetae Pallidae in Fresh Syphilitic Tissue, Arch. Path. **2**:50 (July) 1926.

7. Lacy, G. R., and Haythorn, S. R.: Viability of Spirocheta Pallida in Excised Tissue and Autopsy Material, Am. J. Syph. **5**:401, 1921.

8. Zurhelle, E., and Strempel, R.: Studien über Lebensfähigkeit und Virulenzerhaltung der Spirochaeta pallida in totem Gewebe, Arch. f. Dermat. u. Syph. **153**:219, 1927.

ABSTRACT OF DISCUSSION

DR. LOREN W. SHAFFER, Detroit: Any one who has attempted to culture *Spirochaeta pallida* will agree with Gammel and Ecker as to the difficulties. We have been entirely too ready to accept typical morphology plus motility as evidence of successful culture of virulent organisms. This excellent paper is therefore timely, and such fundamental research is to be encouraged.

I have been interested in cultural methods for increasing the number of *Spirochaeta pallida* directly in fresh syphilitic tissue, and although our objective was not the same, our observations have been similar.

I showed in my work that *Spirochaeta pallida* could remain virulent in excised tissue for as long as five days under various types of incubation using the Nichols strain.

Drs. Gammel and Ecker stated that in the cultures positive inoculations were secured in 32 per cent of the trials after incubation of from one to three days. I should like to ask if the percentage dropped progressively during the three days, giving an average of 32 per cent positive, or if this was the general percentage of "takes." Drs. Gammel and Ecker used both fresh human strains and the Nichols rabbit strain. I should like to ask if there was any variation, considering these sources. In my experience, inoculations into rabbits from human sources are accompanied by failures in a high percentage of cases, and at the best they are mild and atypical, while the Nichols strain is virulent in rabbits and successful transfer is easy.

In conclusion, I should like again to call attention to the clinical and experimental observations previously reported which warrant conservatism in considering that *Spirochaeta pallida* readily die in fresh human tissue.

DR. JOHN A. GAMMEL, Cleveland: The percentage of "takes" with our own strains was approximately from 75 to 80 per cent on direct transfer from rabbit to rabbit. In these instances the spirochetes were outside of the animal body for from fifteen to twenty minutes. The presentage of "takes" did not drop from day to day. As shown in the table, we used for this series thirty-one rabbits, or about ten for each day. The variations observed would have to be checked on a larger series of animals if we should wish to make a point of that.

The Nichols strain was the last one employed in this work, and was used only for one, two and three days. Therefore, we do not know if we would get a "take" after five days, as Dr. Shaffer did, but we intend to carry out experiments along this line in the near future. About twenty animals were inoculated with the Nichols strain, and I think we had 100 per cent "takes."

Originally, the same number of animals was used in the various experiments, but unfortunately we lost quite a few through intercurrent infections.

KERATOLYSIS EXFOLIATIVA AND THE MOSAIC FUNGUS*

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The condition known in America as keratolysis exfoliativa was named by Wende [1] in 1919, who described it as characterized by more or less symmetrical, circumscribed patches of superficial exfoliation encountered most frequently on the palms, less often on the soles and occasionally on the dorsal surfaces of the hands and feet and on the arms and legs. Caryon,[2] unknown to Wende, had previously written of a similar disease under a different title, and Lane [3] concluded that the two diseases were identical. More recently, several observers in Europe, notably Seemann and Rajka [4] and Alexander,[5] studied the disease. Bruhns and Alexander,[6] in Jadassohn's "Handbuch," gave an excellent detailed description of it under the title "dysidrosis lamellosa sicca."

The disease is common and is seen in varying degrees of severity. It begins with white macules, varying in size from that of a pinhead to that of a pea, in which the corneal layer of the skin becomes loosened and raised. The lesions may increase in size to that of a quarter. As a rule, however, the lesions are very small. Very often the lesions

* Submitted for publication, March 1, 1930.

* Read before the American Dermatological Association, Cleveland, June 20, 1930.

* From the Department of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital.

1. Wende, G. W.: Keratolysis Exfoliativa, J. Cutan. Dis. **37**:174, 1919.

2. Caryon, A.: Desquamation estivale en aires des mains, Ann. de dermat. et syph. **4**:283, 1903.

3. Lane, J. E.: Some Observations on Keratolysis Exfoliativa, J. Cutan. Dis. **37**:223, 1919.

4. Seemann, D., and Rajka, E.: Schwere Nagel-und oberflächliche Händ und Fusstrichophytie: Trichophytid, entstanden im Anschlusse an die Impfung des Trichophytonpilzes, Arch. f. Dermat. u. Syph. **143**:9, 1923; Schwere Nagel- und oberflächliche Handteller- und Fussohlentrichophytiesis, Gyógyászat **37**:533, 1923. Rajka, E.: Eine äusserst oberflächliche Form der Trychophytie, Dermat. Wchnschr. **79**:1252, 1924.

5. Alexander, A.: Ueber die durch den Kaufmann-Wolffschen Pilz hervorgerufenen Hauterkrankungen der Hände und Füsse mit besonderer Berüchsichtigung der Dysidrosis sicca lamellosa, Med. Klin. **23**:275, 1927.

6. Bruhns, C., and Alexander, A., in Jadassohn: Handbuch der Haut und Geschlechts-Krankheiten, Berlin, Julius Springer, 1928, vol. 11, pp. 89 and 464.

may be of such a trivial nature that their presence is entirely overlooked. No fluid is found if the lesions are punctured; they appear to be dry from the beginning. This, together with the marked superficiality of the disease, led to the names "corneum layer vesicle," "empty vesicle" and "air bubble," and these seem appropriate to describe the elementary lesion. Within a few hours or a few days the lesions break in the center, and as the scales are attached at the edges collarets are formed, giving the appearance of ruptured, superficial, flaccid vesicles. Absence of noticeable inflammation is a feature of the condition, and this is true whether the lesions are ruptured or unbroken. The scales are always of cigaret paper thinness.

In well marked cases, when the "empty vesicles" are ruptured (usually from friction), the affected skin presents rounded or gyrate areas of various sizes, flanked by jagged collarets of tissue paper-like scales, which may be readily stripped back into apparently normal skin. Crops of new lesions may appear which enlarge and coalesce until most of the skin on the palms and soles is affected. There are no subjective symptoms. The disease is occasionally accompanied by true vesicles in the immediately contiguous area, and invariably it is concomitant with one of the recognized members of the dermatomycosis group, or there is a history of antecedent dermatomycosis of vesicular or interdigital types.

In the milder cases, when only one or two lesions the size of a pinhead or slightly larger are present, they remain for several days and resolve spontaneously by exfoliation. In other instances, when the lesions are large and considerable skin is involved, several weeks may elapse before a cure takes place. While recurrences are not uncommon, the disease appears to be self-limited; therefore, treatment is of doubtful value. Mechanical removal of the scales, antiparasitic and keratolytic ointments and the roentgen rays have been used with apparent benefit in the more severe cases.

PATHOLOGY *

We desired to ascertain the exact position of the "dry vesicle" in relation to the epidermis and especially to the horny layer, but as yet we have been unable to obtain suitable material for histologic study. The scale is very thin, much thinner, apparently, than the normal horny layer of the palm. Therefore, the "dry vesicle" may occur in, rather than under, the horny layer. The only recorded histologic study is that of Wende, which does not provide all the information that is desired. His description was as follows:

> In the corium was seen what might be called a very slight infiltration around the vessels of the papillary layer; otherwise there was nothing abnormal. The

* See Appendix, p. 467.

epidermis showed some widening of the prickle cell layer with slight edema of the prickle cells. In the horny layer the changes were not marked; the nuclei were present. There was a tendency to incomplete formation of keratin, and the cells were loosely united; there were no leukocytes.

MYCOLOGY

Mycologic investigation of the mycoses of the hand has proved difficult and perplexing to all workers. This has been especially true of the vesicular or dyshidrosiform types in which the true sporulated mycelium is usually absent in extemporaneous preparations, and repeated cultures fail to demonstrate the presence of a pathogenic fungus. An occasional repeatedly positive observation may mean that these vesicular eruptions are due at times to primary infections. However, the investigations of Williams,[7] Walthard[8] and Jadassohn and Peck[9] suggest strongly that these eruptions are dermatophytids; that is, that they are toxic rashes occurring in sensitized persons, or that they are due to fungi that reach the part through the blood stream and also, perhaps, by exogenous autoinoculation, such fungi originating from a primary focus such as is commonly found between the toes or in the toe-nails. In such instances it is thought that the transplanted fungi, because of increased immunity, soon die or develop markedly altered characteristics. In this connection Williams and Barthel[10] expressed the belief that clinically insignificant infections of the nail may provide the focus for dissemination of fungi.

Keratolysis exfoliativa has also been subjected to study mycologically, with only a small percentage of positive observations for fungus. Seemann and Rajka obtained two positive cultures in twelve cases of the disorder. In one instance *Trichophyton interdigitale* was cultivated and in the other *Trichophyton gypseum*, the latter having a strong resemblance in culture to the former. Alexander could never demonstrate fungi in the lesions.*

In three cases of vesicular dermatomycosis, we observed dry, white lesions, the size of a pinhead, that were identical with the "empty vesicle" of keratolysis exfoliativa except that the scale was much thicker.

7. Williams, C. M.: Dermatophytid Complicating Dermatophytosis of the Glabrous Skin, Arch. Dermat. & Syph. **13**:661 (May) 1926.

8. Walthard, B.: Zur pathogenese des dysidrotischen Symptomenkomplexes: Ueber ein unter dem Bilde einer Dysidrosis verlaufendes Epidermophytid, Dermat. Ztschr. **53**:692, 1928.

9. Jadassohn, W., and Peck, S. M.: Epidermophytide der Hände, Arch. f. Dermat. u. Syph. **158**:16, 1929. Peck, S. M.: Epidermophytide in der Form postscarlatinoser Schuppungen an den Händen, Klin. Wchnschr. **29**:1357, 1929.

10. Williams, C. M., and Barthel, E. A.: Tinea of the Toe-Nails as a Source of Reinfection in Tinea of the Feet, J. A. M. A. **93**:907 (Sept. 21) 1929.

* See Appendix, p. 467.

In all three cases sporulated mycelium was demonstrated in the "empty vesicles" and no mosaic structure was found. Implantations on culture mediums were negative in each instance. We are uncertain whether or not to include these cases in the category of keratolysis exfoliativa.

Our attention was first directed to a possible mycotic causation for keratolysis exfoliativa because of its invariable association with recognized fungus disease of other areas of the skin, particularly the macerative type of dermatomycosis between the toes. The results of persistent examinations of the scales, however, coincided with the experiences of other observers in that we were rarely able to demonstrate the typical sporulated mycelium recognized as the pathogenic agent in dermatomycosis. We were, however, struck with the regularity with which we were able to demonstrate the mosaic or pavement fungus. In very few instances was there any difficulty in showing its presence, and we were able to obtain a positive microscopic picture in every one of twenty-six cases (table 1). As the mosaic fungus is frequently found in all types of dermatomycosis affecting the hands and feet, its presence in the scales of every case of keratolysis exfoliativa suggests that this clinical entity may be of fungus origin. An appreciation of the importance of determining the exact status of the mosaic fungus, in order to clarify the problem, led to a mycologic study, the results of which will be given later.

REPORT OF CASES

CASE 1.—G. M., a man, aged 52, a physician, for many years noticed at irregular intervals, usually in the summer, the development on the palms of lesions of keratolysis exfoliativa varying in size from that of a pinhead to that of a lentil. The lesions would completely disappear in a few days. Usually only one or two such lesions were present at the same time. He gave a history of having had interdigital dermatomycosis at intervals for twenty years. For the same length of time he had had repeated attacks of vesicular dermatomycosis of the soles in hot weather, and every spring there was an attack of "pompholyx" on the fingers and hands. If he went to a warm climate during the winter, a vesicular eruption immediately developed on the hands. The eruptions disappeared in a week or two while the patient was using Whitfield's ointment. His father had keratolysis exfoliativa of the soles and interdigital dermatomycosis between the toes.

Microscopic examination of the lesions, shown in figure 1, revealed the presence of mosaic fungi in the scales. Implants on culture mediums, using Sabouraud's formula, but substituting crude American dextrose for the French maltose, failed to grow a pathogenic fungus. Scales from between the toes contained mosaic fungi in abundance. At the time the scales were obtained there was no pruritus and no visible evidence of inflammation. No other fungi were seen in extemporaneous preparations made from this location. Cultures from these scales resulted in a growth of *Trichophyton interdigitale*. The wall of a thermic blister on the clinically normal skin of each palm and another on the lateral aspect of the left middle finger contained mosaic fungi, and a similar blister on the flexor

TABLE 1.—*Demonstration of Mosaic or Pavement Fungus in Twenty-Six Cases of Keratolysis Exfoliativa*

Number	Age	Sex	Nationality or Race	Location (Keratolysis Exfoliativa)	Severity	Duration	Previous Attacks	Association with Other Types of Dermatomycosis	Duration of Other Types	Microscopic Data		Culture	Trichophytin Patch Tests
										Keratolysis Exfoliativa	Concomitants		
1	18	F	American	Palms	Severe	4 weeks	None	Interdigital	Years	Mosaic	Mosaic	Positive hands and feet	Positive
2	52	M	American	Palm	Mild (2 lesions)	2 days	Numerous	Interdigital and vesicular	Years	Mosaic	Mosaic	Positive feet	Positive
3	26	M	American	Sole	Mild (1 lesion)	4 days	Numerous	Interdigital and vesicular	4 years	Mosaic	Mosaic interdigits and vesicles	Negative	Positive
4	47	M	American	Soles	Moderate (12 lesions)	?	?	Interdigital	20 years	Mosaic	?	?	?
5	54	M	American	Palms	Moderate (20 lesions)	4 weeks	Numerous	Interdigital	3 weeks ?	Mosaic	Chains	Negative	?
6	48	F	American	Palms	Moderate	?	?	?	?	Mosaic	?	?	?
7	30	M	American	Palm	Mild (1 lesion)	3 days	Numerous	Interdigital	Years	Mosaic	?	?	Negative
8	41	M	American	Palms	Mild	?	None	?	?	Mosaic	?	?	?
9	52	M	Russian	Palm	Mild	4 days	Several	?	?	Mosaic	?	?	?
10	25	M	American	Palms	Moderate	5 weeks	One	Interdigital	Years	Mosaic	Chains	Negative	?
11	24	F	American	Soles	Moderate	?	None	?	?	Mosaic	?	?	?
12	50	M	American	Soles	Mild	1 week	?	Interdigital	?	Mosaic and chains	Mosaic	?	?
13	35	F	American	Palm	Mild (2 lesions)	5 days	Several	Interdigital and vesicular	Years	Mosaic	Mosaic soles and interdigits	?	?
14	34	M	American	Palms	Moderate	?	Several	Interdigital and vesicular	Years	Mosaic	Negative	Negative	?
15	23	M	?	Palms	Mild	?	None	Interdigital	?	Mosaic	Negative	?	?
16	26	M	?	Palms and soles	Mild	?	None	Interdigital	?	Mosaic	Chains	?	?
17	46	M	American	Soles	Moderate	?	?	Interdigital	Several months	Mosaic	Mosaic	Negative	?
18	52	F	American	Palm	Mild	?	Several	Interdigital and vesicular	?	Mosaic	Negative	Negative	?
19	31	M	?	Soles	Mild	?	?	Interdigital and vesicular	Years	Mosaic	Negative	Negative	?
20	47	F	American	Soles	Mild	?	?	Interdigital	?	Mosaic	?	?	?
21	17	M	American	Palms and soles	Mild	?	None	Interdigital	?	Mosaic	Negative	Negative	?
22	32	F	American	Palms and soles	Moderate	?	One	Interdigital	?	Mosaic palms chains soles	Chains	?	?
23	30	M	American	Palms	Mild	3 days	Numerous	Interdigital	Years	Mosaic	Chains	?	Positive
24	42	M	American	Palms	Moderate	2 weeks	Several	Interdigital	3 years	Mosaic	Mosaic	?	?
25	30	M	American	Sole	Moderate	2 weeks	?	Interdigital	Years	Mosaic and chains	Negative	?	?
26	28	M	American	Palms	Mild	5 days	Several	Interdigital	Years	Mosaic	Mosaic	?	?

Fig. 1 (case 1).—A pinhead-sized "empty vesicle" in the center of the palm. An exceedingly mild form of keratolysis exfoliativa.

Fig. 2 (case 2).—Severe type of keratolysis exfoliativa.

surface of the left forearm close to the wrist showed short chains. The patch test[11] with trichophytin was positive.

The second case concerns a severe type of the disease, with interesting cultural observations.

CASE 2.—Miss E. H., aged 18, a student, was seen for the first time in November, 1929. She had not noticed any involvement of the feet until the time of examination. Then she remembered that cracks had appeared between the toes for several summers.

An eruption had been present on the hands for ten days. This was the first attack. It started on her left hand near the thumb as dry white spots which increased in size and finally opened in the center. Gradually the palms of both hands became almost entirely involved, and the eruption spread along the front and sides of the fingers. There were no subjective symptoms.

The patient did not complain of any disorder other than that affecting her skin, and on examination proved to be in vigorous health. The hands showed marked scaling, involving almost the entire palms and palmar and lateral aspects of the fingers (fig. 2). A slight amount of inflammation was present but this was probably due to an ointment the patient had been using. The exfoliation that was present in circumscribed areas as though arising from individual lesions was tissue paper-like in character. It peeled off readily, leaving apparently normal skin. There were a few unbroken lesions of various sizes up to that of a dime. When these lesions were ruptured, no fluid was present. The scales were attached at the sides of the lesions and in the center were free from the underlying skin. On examination of the feet, it was found that slight maceration and cracking were present in the fourth interspaces. No scaling was present on the soles.

Extemporaneous preparations, using 15 per cent potassium hydroxide solution, of many scales from the palms revealed mosaic fungi in abundance. No long, sporulated mycelium was demonstrated. Specimens from between the toes also showed the mosaic arrangement and no long filaments (fig. 3).

Samples of tissue from the two sources, i. e., scales from the hands and macerated skin from the interdigits of the feet, were planted on culture mediums in twelve tubes, six for each source. Colonies of a pathogenic fungus began to grow from both specimens in about half of the culture tubes. Contamination with yeasts and molds was negligible. Three months later, additional plantings were again made with the same success as before.

The growth was first noticed in three days as a white punctum. At the end of a week, it was flat with the exception that the center was elevated. The center was white, while the periphery was yellowish. At this time it was 1 cm. in diameter. Three or four radial furrows were present. The margin was not well defined, the periphery showing many projecting filaments, giving the colony a shaggy appearance.

Within two weeks, the growth was about 2 cm. in diameter. The furrows were less distinct owing to the spreading of white downy duvet over the surface of the colony, only a small portion at the periphery not being covered. Several smaller furrows were present between the original ones.

Within four weeks the growth covered the entire slant and appeared to be at prime. The surface of the colony was covered with a moderately compact,

11. Sulzberger, M. B., and Lewis, G. M.: Unpublished article describing the patch test with trichophytin.

white, woolly growth. The radial grooves were still apparent. At the edges, the yellowish color was apparent at the base of the colony. The medium was discolored, being brownish (figs. 4 and 5).

Since the growth on culture mediums had such unusual characteristics, a sample of scales from the palms was given to Dr. Weidman of Philadelphia who found only the mosaic type of fungus extemporaneously and who was able to cultivate a fungus that had similar culture properties to the one grown in New York. He felt that the presence of radial furrows, characteristic of *Microsporon*

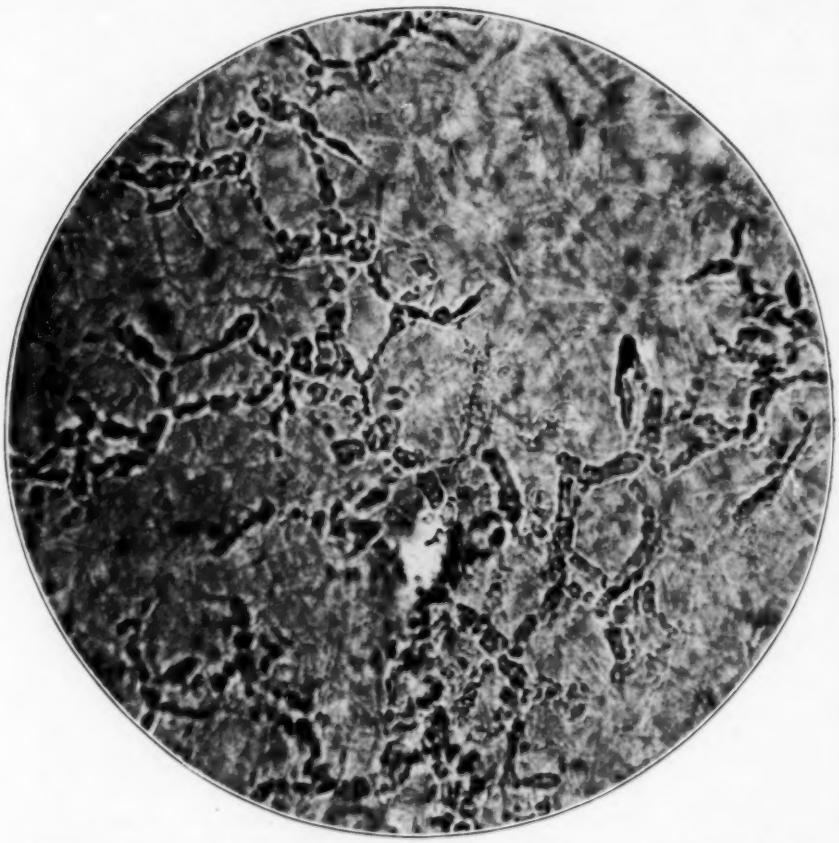

Fig. 3 (case 2).—Mosaic fungi found in scales from the palmar lesions of keratolysis exfoliativa.

audouini was partially offset by the compact texture and creamy yellow color of the colony. The presence of a few minute droplets of water of condensation in the bottom of some of the furrows was also against *Microsporon audouini*. The colony, therefore, had some of the characteristics of both *Microsporon* and *Trichophyton*.

Two kinds of hyphae were seen in the hanging drop. The first was of large dimension and branched usually only at the end of the colony. Fuseaux of the microsporon type were found on the branches. Thickenings on the cell walls

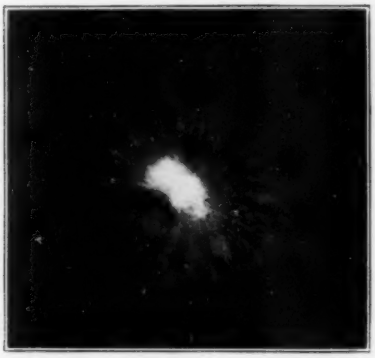

Fig. 4 (case 2).—Growth from scales from the palms at the end of one week. The growth is flat and yellowish except the central knob, which is white. The border is uneven due to the projection of filaments. Radial grooves are present, but do not show in the picture.

Fig. 5 (case 2).—Same specimen as in figure 4, showing the growth at the end of ten days from palmar scales. Radial grooves are apparent, and white duvet is shown spreading over the surface of the colony.

were also present occasionally. The second type of hyphae was more delicate and was frequently en racquette. A preparation made from an agar slant showed the same hyphae as in the hanging drop and also large numbers of fuseaux of the microsporon type. The absence of conidia was noted, except for one instance in which they might be called chlamydospores on account of their gigantic size.

Dismissing the impression that the growth might be a contaminant, Dr. Weidman concluded that the fungus concerned was an atypical form of *Microsporon lanosum*. This decision was prompted by the presence of such large numbers of fuseaux. He added: "the presence of such excessively robust mycelium (pro

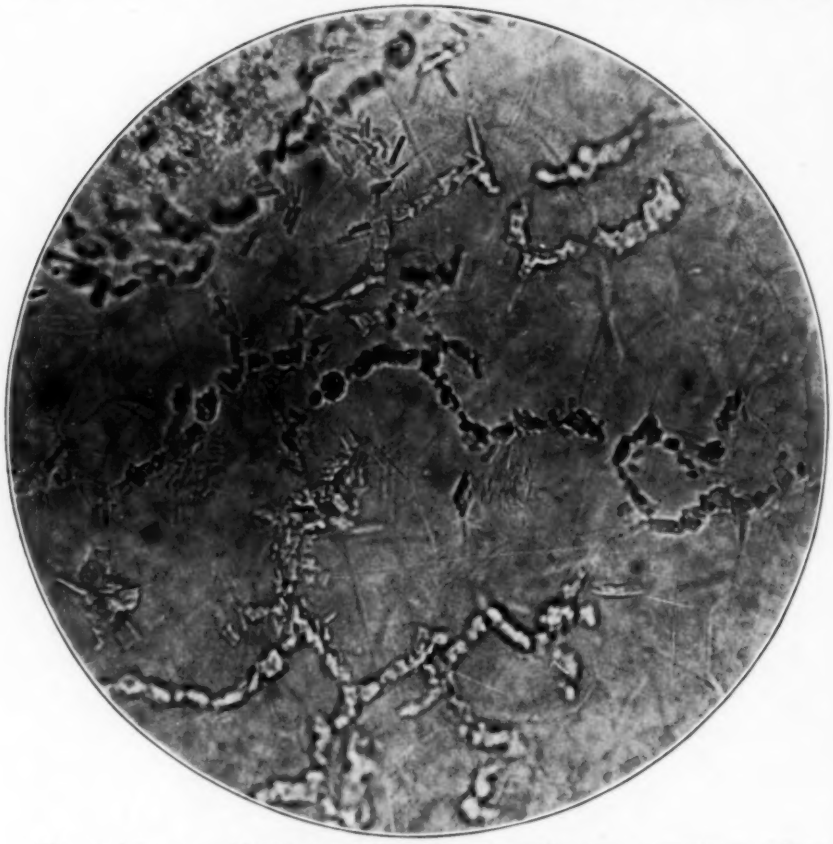

Fig. 6 (case 3).—Mosaic fungi found in the wall of a spontaneous palmar vesicle. Mosaic fungi were found, also, in scales from the "empty vesicle" on the sole, and from scales from the interdigital dermatomycosis between the toes. No other type of fungus was found.

parte) together with the hyaloid thickenings described, mark certain affinities with less pathogenic organisms, and the writer can imagine how the 'species' dealt with here could be a saprophytic form which had not as yet undergone complete evolution into a conventional dermatophyte."

Patch tests with trichophytin made on the back of the hand, on the forearms and on the back resulted in a marked reaction on the arm and back, with erythema, edema and vesiculation. On the hand, the tested area was reddened and a few minute vesicles were present.

Case 3 is illustrative, in our experience, of a common association of keratolysis exfoliativa with the vesicular or dyshidrotic type of dermatomycosis.

CASE 3.—Mr. G. C., aged 26, single, a broker, gave a history of repeated attacks of a vesiculobullous eruption on his hands and feet for more than four years. The eruption had been present constantly for the past year. He stated

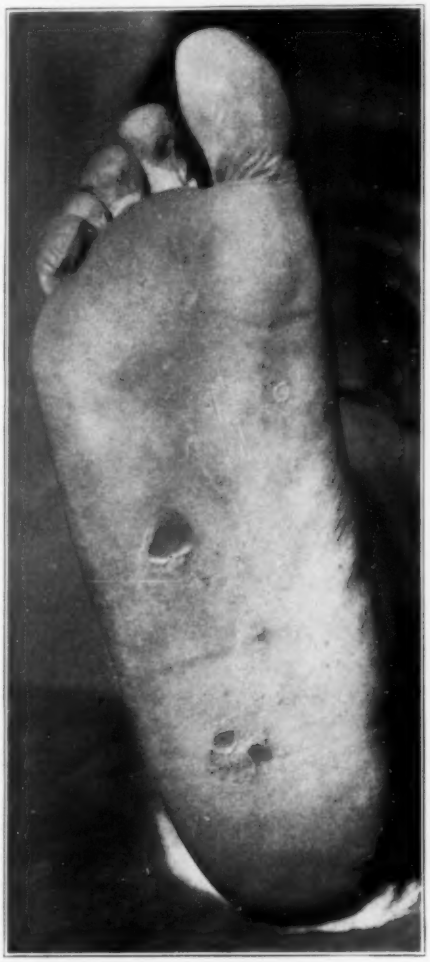

Fig. 7 (case 3).—Remains of a small "empty vesicle" of keratolysis exfoliativa on the sole 1½ inches below the base of the great toe; also remains of grouped vesicles of ordinary type on the heel and in the center of the sole are seen.

that during the latter period he had been given forty roentgen treatments without benefit. The condition had seriously interfered with his work.

The patient was very well developed and above normal weight, with an excess of nervous energy. He suffered from excessive hyperhidrosis (in summer the perspiration ran off his forehead in drops). His hands were wringing wet. This condition was worse when he was nervous or excited.

Examination of the palms and soles revealed numerous vesicles and bullae containing cloudy serum. Considerable inflammatory reaction was present. In the last two interspaces of both feet, the skin was sodden and macerated. In the last interspace of the left foot was a soft corn which was tender on palpation. The nails appeared to be normal.

The roofs of vesicles (large and small) from both the hands and the feet revealed mosaic fungi in abundance. No fungi could be demonstrated in the macerated skin between the toes (fig. 6).

A month later the eruption had improved under treatment with topical remedies (chiefly Whitfield's ointment). There were only a few small vesicles on the sides of the fingers and on the heel. At this time one small "corneum layer vesicle" was present on the left palm. Examination revealed the presence of mosaic fungi in the scales from this lesion.

Two months later, a few remnants of vesicles remained on the bottom of the foot, and one small "corneum layer vesicle" was also present (fig. 7). The mosaic fungus was demonstrated in this lesion. A few small vesicles were present on the sides of several fingers. At this time, also, we were able to demonstrate the mosaic fungus in macerated skin from the toes. Patch tests with trichophytin gave positive reactions on the arm and back resulting in erythema, edema and vesiculation in the tested areas.

Cultures taken at various times from the macerated tissue between the toes, vesicles, blebs and scales were negative on every occasion. The examinations never demonstrated any fungus other than the mosaic form.

THE MOSAIC FUNGUS

When examining suspected tissue for the mosaic fungus, we employed the usual potash method and found that 15 per cent potassium hydroxide was a satisfactory strength. Similar to the long sporulated mycelium or the long, nonseptated variety of pathogen, the mosaic fungus was usually not apparent immediately, but when present was readily discernible if the preparation was allowed to stand for from fifteen minutes to half an hour, preferably on a warm stand. The elements could usually be detected under the low power lens of the microscope, but for study it was necessary to use higher magnification.

In Weidman's original description [12] of the mosaic fungus, he noted:

> The segments are irregularly shaped, and are separated from each other by narrower or broader, but definite spaces; they have a moth-eaten appearance, and their edges and corners are rounded off. They do not have any organized internal structure; arthrospores are not visible within the segments. But it is the arrangement of the mycelium that raises the question whether this is fungus —not so much that it occurs in smaller and larger patches, but that the mycelium ramifies and anastomoses around the individual epidermal cells in such a way as to suggest that air or other refractile matter had become imprisoned between the cells. These hyphae vary in width, until finally one recognizes only thread-like filaments coursing between the cells. It requires fine discrimination to come to the conclusion that these are fungus and not inert intercellular accumulations. I have applied the term "mosaic" to this form because, following as they do the

12. Weidman, F. D.: Laboratory Aspects of Epidermophytosis, Arch. Dermat. & Syph. **15**:415 (April) 1927.

intercellular clefts, the hyphae come to surround smaller and larger polyhedral spaces, which collectively give the "pavement" effect.

The bizarre appearance of the individual elements, being sometimes swollen and bulging and at other times in the form of small chains, has led many observers to disregard the mosaic arrangement as being of fungus nature. Taking into consideration the various sizes of the elements, their division into segments is remarkably even. Their color is that of recognized fungus material and is different from foreign

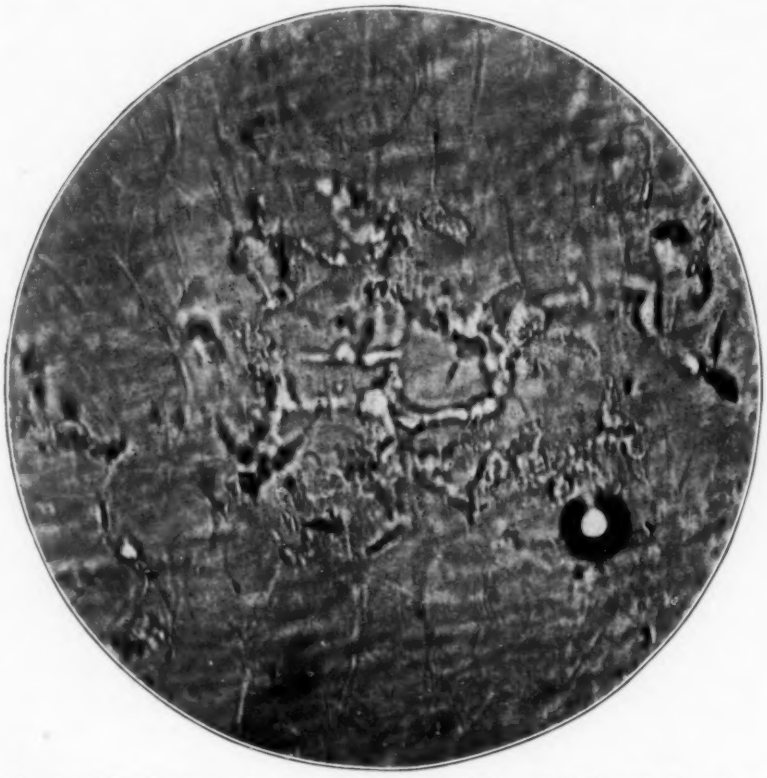

Fig. 8.—Mosaic fungus in scales from keratolysis exfoliativa of the sole. In the immediately adjacent field of the same slide long hyphae were found as shown in figure 9.

material or edges of adjoining cells. Bruhns and Alexander considered the mosaic form to be an artefact and referred to as a "pseudo-fungus." They stated that it is due to liquor potassae which has become diffused in the intercellular spaces. Under an illustration of the mosaic fungus, they stated that the picture is due to a filling out of intercellular spaces with air or potassium hydrate.

That the mosaic fungus is not due to potassium hydrate is proved by its demonstration when xylene is used instead of the usual potassium hydroxide, which we have frequently done. Weidman has dissected the

mosaic fungus free from the surrounding cells and obtained the same tinctorial reactions with Giemsa solution as with fungus substance.

Recently, Greenwood and Rockwood [13] reported that they were able to demonstrate the presence of the mosaic forms with normal mycelium in the same scale. We have also made the same observation. In the instance of a patient who had sodden, macerated skin between the toes and keratolysis exfoliativa of the soles, we obtained mosaic fungi from the intertrigenous areas and a mixture of the mosaic form with long

Fig. 9.—Long, segmented hyphae from scales of keratolysis exfoliativa. In an adjacent field the mosaic form was demonstrated (fig. 8). Segments and arthrospores are poorly shown because of focusing difficulties.

segmented hyphae and hyphae containing arthrospores in the same slide from the lesions of the sole (figs. 8 and 9). We have also observed several times that the microscopic picture may vary from time to time in the same area of skin, at one time giving only long hyphae and at another time only the mosaic picture. White [14] reported

13. Greenwood, A. M., and Rockwood, E. M.: The Skin in Diabetic Patients, Arch. Dermat. & Syph. **21**:96 (Jan.) 1930.

14. White, Cleveland: Autoinoculation Dermatophytosis from Toe Cultures of Human Volunteers, Arch. Dermat. & Syph. **20**:315 (Sept.) 1929.

a case in which he obtained a growth on culture mediums of *Trichophyton interdigitale* when the long chains were in evidence in the potash preparations, but no growth could be cultivated later when only mosaic forms were observed. In connection with the variation of the microscopic picture, it is interesting to recall Weidman's report [15] in which he described the changes in the character of the fungus colonies cultured from his toes over a period of years. He did not mention the microscopic picture in the report.

Incidence of Mosaic Fungus.—We have frequently found the mosaic fungus present in the following localities and in the type of skin indicated.

1. Macerated skin between the toes, both inflammatory and in skin showing little inflammatory reaction.
2. Hyperkeratotic tissue from the soles and palms, clinically diagnosed as hyperkeratotic dermatomycosis (with and without erythema).
3. Small and large spontaneous vesicles from the hands and feet, in patients showing interdigital maceration.
4. Small and large scaly areas on the palms and soles, known clinically in this country as keratolysis exfoliativa usually with interdigital dermatomycosis of the feet. In this class its presence is invariable.
5. In the roofs of artificial blisters on apparently normal skin of the palms in eleven of thirty-four patients. This observation will be commented on later.

Since some observers have recognized the presence of mosaic material in potash preparations but disregarded it as an artefact because of its irregularity in size and form, we searched for it in material from various diseases of the hands and other parts of the body. In this we were unsuccessful except in the artificial blebs previously mentioned. A summary of this work follows. Many patients were examined in each instance.

1. Psoriasis—palms, elbows, trunk.
2. Lichen planus—forearms.
3. Pityriasis rosea—trunk. This was at the verbal suggestion of W. Jadassohn, who had found a mosaic arrangement. We carefully examined many patients, with negative results.
4. Pemphigus—trunk.
5. Superficial scales from plantar warts.
6. Scales from palms following repeated application of alcohol.
7. Skin sliced from palms with a razor following inunction with grease. It was thought that fat rubbed into the horny layer might produce the mosaic picture.
8. Scales from dry and waxy seborrhea of the scalp and scales from seborrheic dermatitis of the face. This was done because of the fat content of the scales. In this connection it will be recalled that some of our work was done with xylene, but the mosaic fungus was not dissolved by this solvent.

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15. Weidman, F. D.: Morphologic Variations in a Ringworm Species of the Toes, Arch. Dermat. & Syph. **13**:374 (March) 1926.

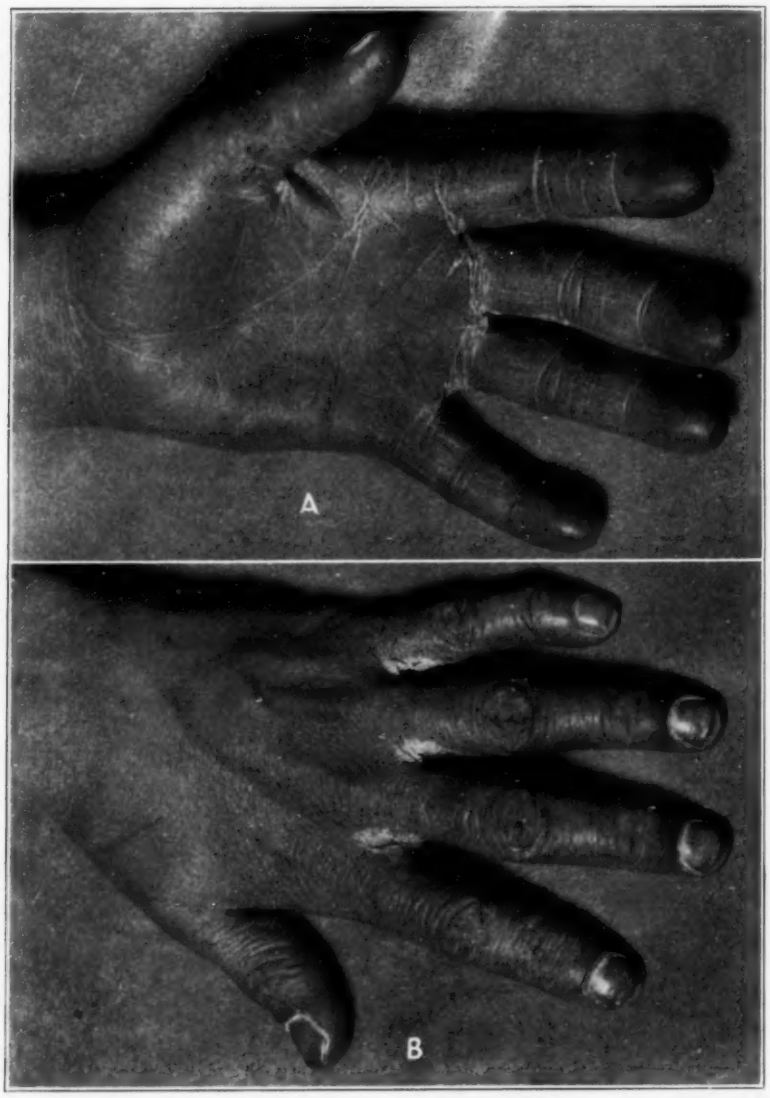

Fig. 10.—*A*, superficial scaling in the case of erythema toxicum mentioned in the context. Examination of these scales failed to demonstrate mosaic fungi and cultures were negative. *B*, note the transverse ridges on the nails which correspond in time to a previous attack of the disorder of the skin.

TABLE 2.—*Examination of Artificial Blisters for the Mosaic Fungus*

Number	History of Dermatomycosis		Existing Focus	Trichophytin Patch Test	Microscopic Examination	Artificial Blister			Comment
	Hands	Feet				Location	Method	Result	
1	Keratolysis exfoliativa and vesicles	Interdigital	Between toes	Positive	Mosaic, interdigital and keratolysis exfoliativa	Palm Palm Fingers Forearm	Heat Heat Heat Heat	Mosaic Mosaic Mosaic Chains	Mosaic in vesicles from both palms; pathogen in culture from toes where only mosaic was found
2	No	Interdigital	Between toes	Negative	.....	Palm	Heat	Negative	
3	Vesicular and hyperkeratotic	No	Hyperkeratotic on palm	Negative	Mosaic hyperkeratotic	Palm	Heat	Negative	
4	No	Interdigital	?	Positive	?	Palm	Heat	Mosaic	
5	No	Interdigital	Between toes	Positive	?	Palm	Heat	Mosaic	
6	No	Interdigital	No	Negative	Negative	Palm	Carbon dioxide	Negative	
						Palm	Heat	Negative	
						Forearm	Heat	Negative	
7	Keratolysis exfoliativa	Interdigital	Between toes	Negative	?	Palm Palm	Heat Carbon dioxide	Mosaic Negative	
8	No	Interdigital	Nails and between toes	Positive	Negative	Palm	Carbon dioxide	Mosaic	
9	Keratolysis exfoliativa	Interdigital	Interdigital and keratolysis exfoliativa	Positive	Chains interdigital; mosaic in keratolysis exfoliativa	Palm	Heat	Negative	
10	No	No	No	Not done	Negative	Palm	Carbon dioxide	Negative	
11	No	No	No	Not done	Negative	Palm	Carbon dioxide	Negative	
12	Vesicles	Interdigital	Interdigital	Positive	?	Palm	Heat	Negative	
13	No	No	Interdigital	Positive	Mosaic	Palm	Heat	Mosaic	
14	No	No	No	Negative	?	Palm	Heat	Negative	
15	No	Interdigital	Interdigital	Positive	?	Palm Forearm	Heat Heat	Negative Negative	
16	No	No	No	Negative	?	Palm	Heat	Mosaic	
17	No	Interdigital	No	Negative	?	Palm Forearm	Heat Heat	Negative Negative	
18	No	No	No	Negative	?	Forearm	Heat	Negative	
19	No	No	No	Negative	?	Palm	Heat	Negative	
20	No	No	No	Negative	?	Palm	Heat	Mosaic	
21	No	No	No	Negative	?	Palm Forearm	Heat Heat	Negative Negative	
22	No	No	No	Positive	?	Palm	Heat	Negative	
23	No	No	No	Negative	?	Palm	Heat	Negative	
24	No	No	No	Negative	?	Palm	Heat	Negative	
25	No	No	No	Negative	?	Palm	Heat	Negative	
26	No	No	No	Negative	?	Palm	Heat	Negative	
27	No	No	No	Negative	?	Palm	Heat	Negative	
28	No	No	No	Negative	?	Palm	Heat	Negative	
29	No	Interdigital	Interdigital	Negative	?	Palm	Heat	Mosaic	
30	No	Interdigital	Interdigital	Not done	?	Palm	Heat	Negative	
31	No	Interdigital	Interdigital	Positive	?	Palm	Heat	Negative	
32	No	No	No ?	Positive	?	Palm	Heat	Mosaic	
33	No	No	No	Negative	?	Palm	Heat	Negative	
34	No	Interdigital	Interdigital	Positive	?	Palm	Heat	Mosaic	

9. Exfoliation following sunburn—arms; scaling produced from ultraviolet irradiation from the Kromayer lamp—back of hand.

10. Scales from remnants of palmar callus.

11. Tinea circinata—trunk, arms.

12. Tinea versicolor—trunk.

13. Tinea cruris.

14. In the case of a young woman (fig. 10) who had recurrent attacks of an erythematous, desquamative eruption with fever, affecting the hands, thighs, inner aspects of the arms and parts of the trunk, scales from the various affected areas were collected. The scales were thicker than those of keratolysis exfoliativa. Examination of these scales failed to reveal fungi of any form. Cultures were also negative.

As the mosaic fungus is frequently present in spontaneous vesicles and bullae on the hands and feet in patients having dermatomycosis,

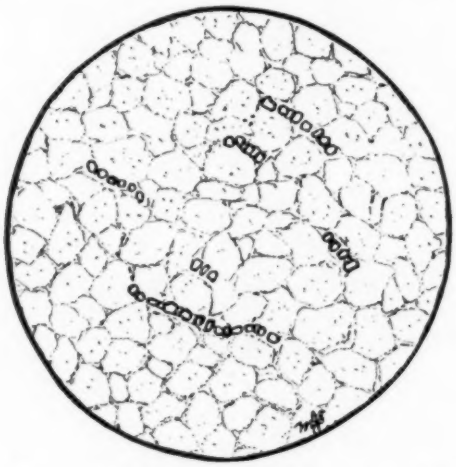

Fig. 11.—Sporulated hyphae found in the roof of a thermic blister on the forearm in apparently normal skin. The mosaic arrangement was not found in this specimen, but was detected in other artificial blisters from the palms in the same patient.

artificial blisters were examined (table 2) to determine whether the fungus could be demonstrated in such tissue. Thirty-four patients with apparently normal palmar epidermis submitted to the test. Most of the lesions were produced with the hot head of a match. A few blisters were produced by refrigeration with carbon dioxide snow. Forty-three blisters were examined. Mosaic fungi were found in thirteen preparations made from eleven patients (30.3 per cent). Negative results were obtained in twenty-nine specimens (67.4 per cent). Chains were found in an artificial blister on the forearm of one of the positive cases (fig. 11). Of the eleven positive cases, seven gave a positive reaction to the trichophytin patch test, and four gave negative results.

Eight positive mosaic cases gave a history of, or exhibited a focus of, dermatomycosis elsewhere, usually between the toes. Three gave a negative history, and no focus could be determined. Of twenty-three patients with negative mosaic observations in artificial blisters, nine either gave a history of attacks of conventional dermatomycosis or exhibited foci. Fourteen were negative in this respect.

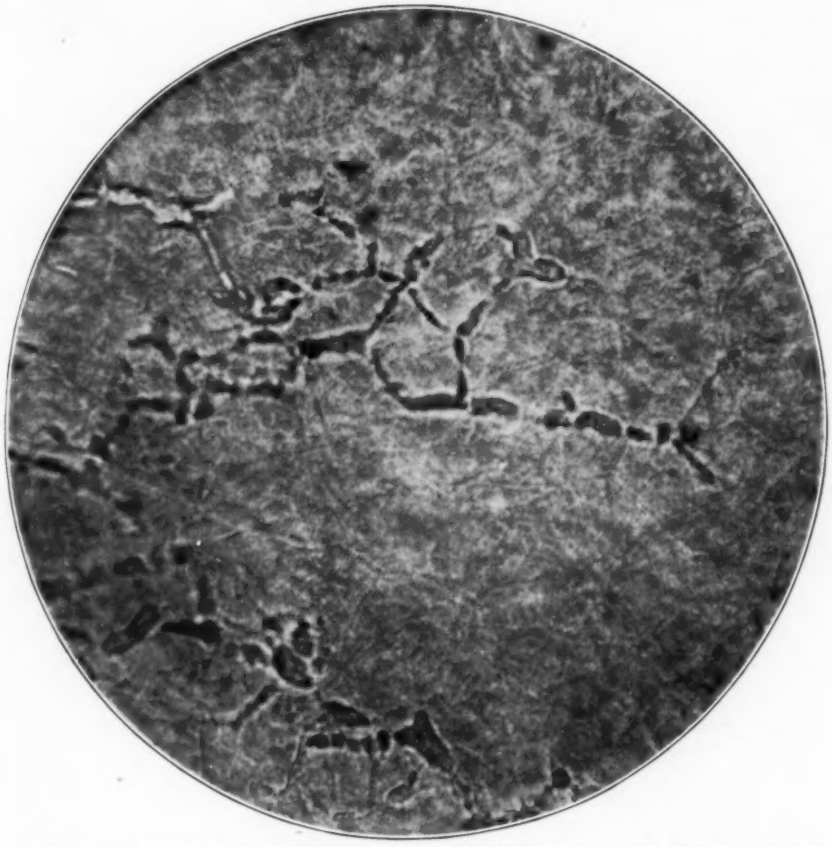

Fig. 12.—Mosaic fungus in scales from a patient with interdigital maceration with very little inflammation. No lesions on palms or soles. No other type of fungus was found. Cultures were negative.

SUMMARY AND COMMENT

The following factors are in favor of the opinion that the mosaic form is a fungus and not an artefact:

1. It is demonstrated in every case of keratolysis exfoliativa.

2. Keratolysis exfoliativa seldom if ever occurs in the absence of conventional forms of dermatomycosis or a history of previous attacks of interdigital or vesicular types of dermatomycosis.

3. The mosaic fungus is frequently demonstrated, extemporaneously, in interdigital, vesicular and hyperkeratotic dermatomycosis or dermatophytid of the hands and feet alone or in association with accepted pathogenic fungi.

4. Mosaic fungi are rarely demonstrated in diseases other than conventional dermatomycosis or dermatophytid of the hands and feet and of other locations.

5. Pathogenic growths have been cultivated in a few instances from the scales of keratolysis exfoliativa and in vesicular and interdigital dermatomycosis when only mosaic forms could be found in extemporaneous preparations.

6. Thus far, artificially produced blisters give negative results for the most part. Positive results are obtained usually in locations that are predisposed to dermatomycosis, and the patients usually give a history of previous attacks of dermatomycosis or a fungus focus is present on the hands or feet or between the toes. Furthermore, chain forms have been found in these vesicles. Fried and Segal,[16] in a series of experiments with rabbits, in which an emulsion of a pathogenic fungus was injected intravenously, were able to produce lesions on skin which had been scarified in 38 per cent of the animals tested.

7. Xylene preparations and the absence of mosaic forms in fatty scales of seborrhea would seem to exclude confusion with fat globules and artefacts found in potash solutions.

8. Air bubbles and débris between the scales are apparently excluded by the color, by the fact that the mosaic form can be dissected free and because it has a fairly constant morphology. It gives, moreover, the same tinctorial reactions with Giemsa stain as with fungus substance.

9. If a case of dermatomycosis, interdigital for instance, is examined repeatedly for a long time, conventional hyphae may be found at one time and the mosaic form at other times, or both may be found in the same specimen. Growths on culture may also change their appearance from time to time. These morphologic and cultural alterations may, with more study, be found to be associated with corresponding clinical changes.

The following factors are in favor of the opinion that the mosaic form is an artefact: (1) its method of branching between the cells; (2) the irregular contour of the segments, and failure to appear as long hyphae; (3) failure to cultivate the mosaic form more frequently; (4) demonstration of mosaic fungi in artificial vesicles in apparently normal skin.

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16. Fried, S. M., and Segal, M. B.: The Hematogenous Production of Dermatomycoses, Arch. Dermat. & Syph. **19**:98 (Jan.) 1929.

In several instances a pathogenic fungus has been grown when only the mosaic form could be demonstrated extemporaneously. This may mean, of course, that a pathogen was overlooked or it may mean that it is occasionally possible to obtain a growth. At the present state of our knowledge it would seem unwarranted to state definitely that the mosaic fungus is not a fungus simply because it cannot always be cultivated. For instance, *Microsporon furfur* may be grown on culture mediums only under certain conditions and with extreme difficulty. Under the best conditions, it is not always possible to cultivate the known long pathogen.

Josef Jadassohn, in discussing his paper, "The Importance of Immune Biologic Processes in the Morphology of Skin Lesions,"[17] stated that "One can imagine that even fungi which are still to be seen microscopically are damaged in such a manner that they do not grow in culture mediums." The mosaic form may be a degenerated pathogen barely able to survive in an unfavorable environment. It is capable of growth, but is without the ability to reproduce itself, as a rule, in long chains and to push aside the cells; instead, it must conform to the structure of the skin, and consequently the "pavement" effect is seen. It may be a rest form or a transitional form, and it may act as a saprophyte until the environment becomes more favorable.

It may be assumed, until there is proof to the contrary, that the mosaic form is a degenerated pathogen because of the defensive mechanism of the host which has been only partly successful. Certainly, no one has yet dared to suggest that the organism is a new species. Some investigators believe it to be an artefact, but we believe that the weight of evidence just now is in favor of its being a degenerated fungus.

The reason for the usual failure to demonstrate the long, seldom branching (pathogenic) fungus in both the scaly and the vesicular varieties of dermatomycosis, especially of the hands, has never been satisfactorily explained. If the lesions are toxic they should disappear when the original focus has been cured. While this does sometimes take place, the fact remains that many of these eruptions are exceedingly stubborn and recurrences are common, even in the absence of discernible foci. Of course, it must be kept in mind, as Williams and Barthel have pointed out, that the focus may be in the nails and may be so insignificant as to escape observation.

If the lesions of dermatophytid are caused by the dissemination of fungi from an original focus, one would expect to locate the growing fungus in the secondary eruptions. The fact that the mosaic form is always found in keratolysis exfoliativa and frequently in other dermato-

17. Jadassohn, Josef: The Importance of Immune Biologic Processes in the Morphology of Skin Lesions, Arch. Dermat. & Syph. **21**:355 (March) 1930.

mycoses of the hands and feet may indicate that these eruptions are caused by a dissemination of fungi from an original focus, but that the organisms become altered because the environment has become unfavorable. Thus it is possible that dermatophytids may be caused either by fungus products or by the transplantation of fungi which soon die or the characteristics of which become greatly altered. It may be, therefore, that keratolysis exfoliativa is a dermatophytid due to transplanted fungi, which because of increased immunity of the host are found only in the mosaic form.

CONCLUSIONS

1. Keratolysis exfoliativa is a clinical entity limited mostly to the palms and soles and represented by a limited or a rather extensive eruption. The elementary lesion is the so-called "empty vesicle," which is an exceedingly superficial exfoliation without visible evidence of inflammation and with no subjective symptoms.

2. It is rarely possible to find the long typical pathogen in these scales.

3. In our experience, the mosaic fungus is always present.

4. In a typical, fairly severe case of the disorder, mosaic fungi were found only in potash preparations of scales from the hands and macerated tissue from the interdigits of the feet. Growths in culture mediums from the two sources were identical. The fungus was considered atypical *Microsporon lanosum*. In another similar case a pathogen was grown from scales from between the toes. While by no means conclusive evidence that the mosaic fungus is capable at times of being cultivated, since spores of the pathogen may have escaped notice, these observations are at least suggestive. Attempts to cultivate the mosaic fungus usually fail.

5. In studying material from various sources and in different diseases of the skin, it was found that the mosaic fungus is frequently present in conditions that are clinically known as dermatomycosis or dermatophytid, while in other diseases it is absent. The organism is frequently found in the roofs of artificial vesicles of the palms in patients who have or who have had dermatomycosis. Occasionally it is encountered in patients who have no detectable fungus focus. In one instance sporulated hyphae were found in an artificial blister. The presence of the mosaic fungus in artificial blisters may indicate that the fungus is capable of being present in normal skin with no visible clinical disease. Another interesting possibility is that fungus elements circulating through the blood stream may lodge in tissues that have been partially destroyed or damaged.

6. The mosaic fungus is probably degenerative and represents the result of an immune process set up by the host which is only partially successful.

7. Keratolysis exfoliativa is probably a dermatophytid caused by the mosaic fungus which has been transplanted from a focus of pathogenic fungi.

APPENDIX

In connection with experimental work on animals, it is interesting to note that Kogoj [18] was able to localize a trichophytic lesion from which fungi could be found, after the hematogenous inoculation of fungus substance by the infliction of a slight trauma. Following this lead, other observers were able to repeat the experiment (Fried and Segal's work was mentioned in the body of the article). Sulzberger [19] also did some interesting work with animals. He found that the internal organs may contain fungi following an intracardial injection of fungus spores, and even after cutaneous infection fungi remained in the blood stream and internal organs for many days. In another series of experiments, he was unable to force fungi to attack the internal organs in living animals even after the organs had been traumatized. However, if the organs were removed from the body and allowed to stand, growth could be obtained. This evidence coincides with our experience in experiments on human volunteers in which we were able to find mosaic fungi in dead tissue. In our experiments this tissue was from the roofs of artificial blisters. In analogy to the observations of Sulzberger in guinea-pigs, Peck found fungi (one colony) in culture from the blood in one case of interdigital tinea of the feet.

We are able to report sixteen additional cases of keratolysis exfoliativa, nine on the palms and seven on the soles, in all of which we were able to demonstrate the mosaic fungus. In no case could growths be obtained on culture mediums. In every instance there was evidence of interdigital maceration, and in three cases there was also a coincidental vesicular eruption on the hands.

Dr. Goldenberg drew our attention to an article by Alexander [20] in which he was successful in cultivating *Trichophyton interdigitale* from one case of keratolysis exfoliativa. He also reported two cases that

18. Kogoj, F.: Experimenteile Beiträge zur Lehre von den Dermatomykosen mit besonderer Berüchsichtigung der Lokolisationsbestimmung hämatogener Infektionen, Arch. f. Dermat. u. Syph. **150**:333, 1926.

19. Sulzberger, Marion B.: The Pathogenesis of Trichophytids, Arch. Dermat. & Syph. **18**:891 (Dec.) 1928; Experimentelle Untersuchungen über die Dermatotropie der Trichophytonpilze, Arch. f. Dermat. u. Syph. **157**:345, 1929.

20. Alexander, A.: Dysidrosis Sicca Lamellosa oidiomycetica, Dermat. Ztschr. **53**:5, 1928.

were due to *Oidiomycetes*. Previously, Alexander reported his inability to demonstrate pathogenic fungi from these lesions.

A pinhead-sized, unruptured, "empty vesicle" of keratolysis exfoliativa on the palm was excised for microscopic examination. The slides were studied by Dr. D. L. Satenstein and by us. There was moderate hyperkeratosis. The lesion occupied the lower part of the horny layer

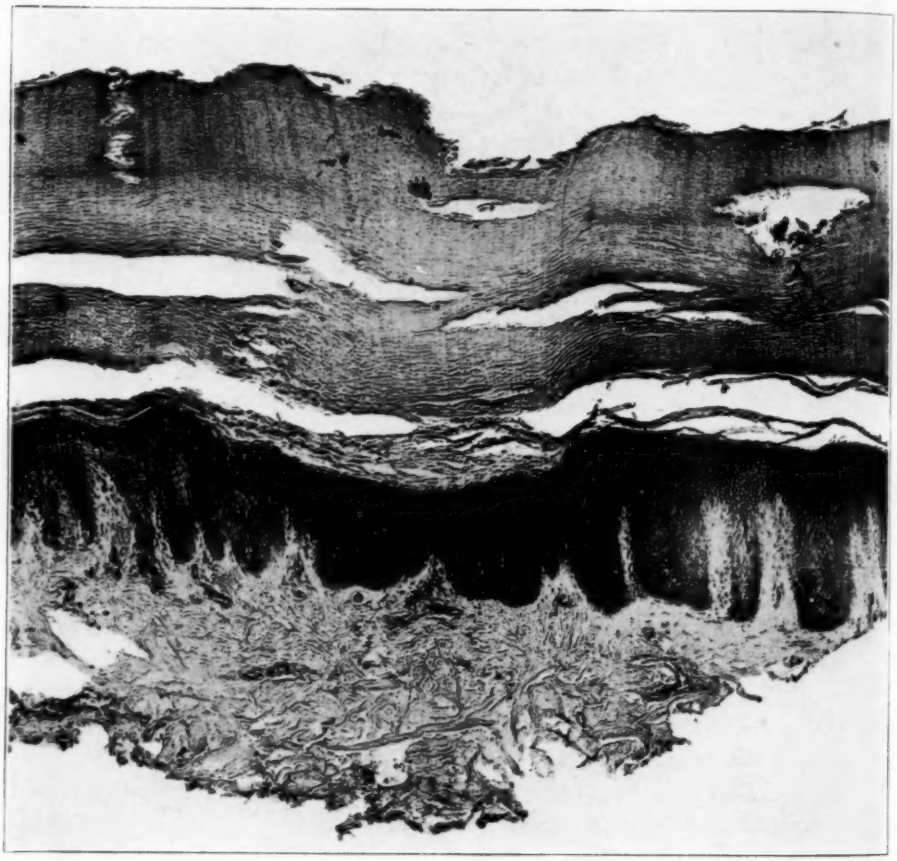

Fig. 13.—Low power photomicrograph of an "empty vesicle" of keratolysis exfoliativa. The specimen was taken from the palm.

and the upper part of the rete, as shown in figure 13. The appearance was that of a large dell or depression in the upper part of the rete. In this location the rete was thinner and the papillae were smaller and fewer in number than beyond the lesion. The various layers—basal, prickle and granular—were intact, although the last was reduced to a single layer of cells. There was no general parakeratosis, but nucleated granular and horn cells were found in the so-called empty vesicle. There

were moderate acanthosis and some edema of the rete, moderate interstitial edema of the cutis, dilatation of the superficial capillaries and perivascular infiltration of small round cells. There was no degeneration and no tinctorial changes. The elastic tissue was normal.

ABSTRACT OF DISCUSSION

DR. JAMES HERBERT MITCHELL, Chicago: One of the first things that I learned in using the microscope in work on ringworms was that the "mosaic fungus" was an artefact. One of the reasons, I believe, that we find it in keratolysis exfoliativa is that its scales are dry. It is possible to find it both in the absence and in the presence of true fungi. Some of you may have seen a series of photomicrographs I have on exhibition here. I set up the material and kept it untouched for five days. After taking the last of the series of photographs, I made another search of the preparation and found the mycelium, which was not visible at first. There is presented also a high power detailed photograph of the mycelium.

I used 15 per cent sodium hydroxide, and from long experience I have learned that true fungi not only remain visible but become more visible as time goes on. Dr. Greenwood tells me that in his experience the fungi in 40 per cent hydroxide disappear over night. That is not my experience; with 15 per cent hydroxide I have kept such preparations around the office for several weeks and have used them repeatedly for demonstration in class.

I am inclined to believe that keratolysis exfoliativa is a fungus disease, but so mild that we do not find the organism as a rule.

DR. CLARK W. FINNERUD, Chicago: I should like to congratulate Dr. MacKee and Dr. Lewis on this interesting and thorough study.

Dr. Ormsby and I have been studying keratolysis exfoliativa in some degree over a period of several years, and I should like to mention the observations in our recent cases and in two or three others. We merely raised the same questions that the observations raise.

In cultures made from sixteen recent cases of what we considered keratolysis exfoliativa, we grew cryptococcus in two instances from practically every scale planted. Otherwise, our cultures were negative, except for the ordinary contaminators.

In these sixteen cases we found "mosaic fungi," so-called, in potassium hydroxide preparations in the majority but not in all. We also noted them in calluses and in desiccated vesicles of other disorders. Furthermore, we found this phenomenon in preparations of other disorders which contained true mycelium, and in two instances the true mycelium seemed in transition with the mosaic bodies. We repeatedly noted that the morphology of the "mosaic bodies" changes, or that these bodies entirely disappear on standing for a few hours or days in the hydroxide, as is well illustrated in Dr. Mitchell's exhibit. Unlike yeasts and true fungi, we have come to regard them as artefacts, probably intracellular air.

In two cases not included in the sixteen mentioned, we found true mycelium, segmented and branched, in lesions of the palms which clinically were illustrations of keratolysis exfoliativa. In one of these, lesions were also present on the soles and showed similar organisms. We have come to believe, therefore, that a clinical picture similar or identical to keratolysis exfoliativa may be produced by the local action of demonstrable fungi, and, furthermore, that such a picture may result from the absorption of toxins from a distant fungus or bacterial focus, for

in several cases we have noted classic keratolysis exfoliativa of the palms in association with an acute vesicular exacerbation of ringworm of the feet. It seems possible also that toxic eruptions of other natures might be capable of imitating this clinical picture. We therefore do not feel justified in considering keratolysis exfoliativa an entity in any other than purely the clinical sense.

DR. HOWARD FOX, New York: As an amateur mycologist I hesitate to express an opinion, except that the essayists have performed a careful investigation. They have brought up the question of the true nature of these mosaic forms. Any one who attempts mycologic work is often puzzled to determine whether certain bodies are fungi or artefacts.

There can be no doubt that these mosaic forms do not have the ordinary structure of fungi. Their situation and branching exclusively between cells, their extreme irregularity in size and shape and the great number of polyhedral pointed and hardly visible particles are so unusual that if they are ordinary fungi they must represent some unusual degenerative type.

The authors consider this degenerative form to be due to an immune process set up by the host. This is possible, but there are forms of mycotic infection in which the immune process is marked (pustular ringworm with specific antibodies in the blood) and in which we never see these degenerative forms. The fungi may disappear, but if they persist they retain their usual structure.

It seems to me that the question of the nature of these mosaic forms has not yet been settled and requires further study.

DR. ARTHUR M. GREENWOOD, Boston: I have always felt that these mosaic forms were a degenerative type of fungus. I must say, however, that if I had ever had this type demonstrated in any skin disease that did not seem clinically mycotic it would shake my faith in it. We believe that we have seen under the microscope the usual actively growing fungi changing gradually into this mosaic form. Until we get a clearing medium that will allow us to examine these fungi without interfering with their viability, and after having seen them, to pick a single cell and plant it, I do not see how we can prove the matter one way or the other. In 1921, I cultivated *Microsporon lanosum* in one case of keratolysis exfoliativa of the hands.

DR. MARTIN F. ENGMAN, St. Louis: I wonder if all of you know the method of studying the fungi in the superficial epithelium. A piece of plain adhesive plaster —not the oxide of zinc variety—is stuck on the skin and allowed to remain for an hour or two. It is then removed and placed in benzene, and a little film will float to the top of the benzene. This is taken out and washed and fixed on a slide with gentian violet and examined under oil immersion. This method shows the organism in the epithelium very plainly.

DR. EARL D. OSBORNE, Buffalo: We have been much interested in these cases of keratolysis exfoliativa. I subscribe to what Dr. Greenwood and some others said about the mosaic form being a degenerative or attenuated form of the organism. During the past few months, we have made a study of a few cases diagnosed several years ago by Dr. Wende as keratolysis exfoliativa in patients who afterward came to the office with what we took to be ringworm of the palms. We have studied these cases and found a mycelial organism. I think that if we have repeated opportunities to examine cases in which the mosaic form is found between the toes, we will sooner or later run across a mycelial organism. I think that the difficulty in cultivating such an organism is due to the fact that we are dealing with an attenuated form that will not grow on ordinary mediums. If we could get cultures and produce a positive inoculation from these cultures, we would have positive proof of the etiology of the condition.

DR. JOHN E. LANE, New Haven, Conn.: I shall discuss Dr. MacKee's paper entirely on clinical grounds. On these grounds it seems to me that keratolysis exfoliativa is a clinical entity. This disease comes on almost always under the same condition: it appears within the first few hot days of the season and reappears during the summer after a few very hot days in succession. The appearance of the disease is typical, and the cure is spontaneous in mild and severe cases, which is evidence to me that it is a clinical entity.

In regard to the evidence of its being due to a fungus, I do not lay such great stress on the fact that because it is concomitant with ringworm infection of the feet, it is necessarily due to a fungus. What disease is not? This is not a usual accompaniment of ringworm, and I think that it occurs no more often than do other diseases that may be seen with it.

It also seems to me that we are laying too much stress on the manifestation that too many skin diseases are due to allergy. If this is an allergic effect of ringworm of the toes, which can be found only with allergy, it seems to me peculiar that it should always occur on the same places, that it should always be symmetrical and that we cannot find allergic effects any other place on the body.

One point that I think Dr. MacKee did not bring out is the fact that the cases of the disease that are seen on the feet, while more common than those on the hands, are usually much more severe. I have not always hunted for fungi in these cases, but I have never found them when I have. I have found ringworm on the feet in some cases, but only when both feet and hands were involved.

The whole point of the study was stated by Dr. MacKee much better than I can do it.

DR. GEORGE M. MACKEE, New York: I am glad to obtain Dr. Engman's suggestion of a method that we have not used but will try.

I appreciate the discussion very much, for this is a preliminary report and the more we learn from discussion, the more help we will have in our future work.

Dr. Lane stated that if keratolysis exfoliativa is due to allergy, it should occur on other parts of the body. I do not think that this is a necessary conclusion, for there are localized and generalized types of specific, superficial and deep sensitization. This has been brought out definitely by patch tests.

I agree with all of the discussion. We do not know whether the mosaic form is fungus or artefact. We think that the weight of evidence at present is in favor of its being a degenerated or attenuated fungus. The investigation will be continued.

APPARENT SPECIFIC EFFECTS OF SODIUM IODIDE IN HERPES ZOSTER

PRELIMINARY REPORT *

E. WOOD RUGGLES, M.D.
ROCHESTER, N. Y.

Although well aware that even fifteen swallows "do not make a summer," I venture to report the following cases which appear to justify the opinion that sodium iodide, administered intravenously, exercises a specific action in herpes zoster.

CASE 1.—On Jan. 12, 1929, I saw a man, aged 30, who had a severe attack of herpes zoster, involving the right side of the face, chin, neck and ear and extending half way to the vertex in the scalp. He was suffering from excruciating neuralgic pain. I planned to administer autogenous blood in the buttocks, but, on looking over my files, found a clipping ten or fifteen years old stating that a Dr. Richmond of El Paso, Texas, had cleared up a severe case of ophthalmic zoster in six days by two intravenous injections of sodium iodide; I therefore injected 2 Gm. The patient returned the next day amazingly improved. The severe pain had practically disappeared, and the vesicles were flattened and beginning to desiccate. I repeated the treatment, and two days later administered a third injection. At the fourth treatment, three days later, the vesicles had dried and there was no serum and no pain. The skin was practically normal within two and a half weeks.

CASE 2.—On March 11, 1929, I saw a young woman with a severe attack of zoster of the right side of the abdomen, and I administered 2 Gm. of sodium iodide. She returned the next day with much less pain and the vesicles considerably flattened. I administered sodium iodide. I did not see her again, so called on her in April. She said that I had left the office when she called for the third treatment, and that the next day she was so greatly improved that she did not return. She told me that the disease cleared up entirely in ten days.

CASE 3.—On May 1, 1929, I saw quite a severe case of zoster of the left side of the face and scalp and the left ear, in a man aged 33. I administered sodium iodide on this day and on the following day. He did not return, owing to an intercurrent infection and fever, but his physician telephoned me that the condition had improved considerably. I saw him again six days after the first dose; there were no vesicles or pain, but a few small black areas where gangrene had occurred. This patient also had received only two treatments.

CASE 4.—On June 23, 1929, a woman, aged 53, consulted me because she had a moderate case of infra-orbital zoster of one week's duration, with several groups of lesions on the left cheek and the eye nearly closed by a dark edema. This patient had a temperature of 102 F. on the evening of the first treatment, and was not greatly improved at the second treatment the following day; but

* Submitted for publication, March 1, 1930.

* Read at the Fifty-Third Annual Meeting of the American Dermatological Association, Cleveland, June 20, 1930.

at the third treatment, two days later, the vesicles were drying up, the pain had greatly decreased, and the edema had nearly vanished. At the last treatment on the seventh day, the skin was practically clear, except that there were three black scales where gangrene had occurred. One week later, the skin was normal.

CASE 5.—On June 28, 1929, I was consulted by a woman aged 53, who one week previously had commenced to have vesicles on the left side of the scalp and forehead and the upper lid of the left eye. I administered 2 Gm. of sodium iodide. At the next treatment on June 29 she had greatly improved, the vesicles were flattening and desiccating, and the pain was greatly diminished, except in the scalp near the vertex. There was edema of the left lower lid. On July 1, the vesicles were nearly dry; there were four small suppurating, gangrenous areas on the forehead, and the edema had lessened. On the seventh day, the pain had ceased, except a little in the region of the scalp. There was some pus in the gangrenous area. This case cleared up entirely in two weeks, with the exception of three crusts; the remaining skin was normal.

CASE 6.—On July 11, 1929, a man, aged 31 years, with the following history, consulted me. Five days previous to presentation he had severe neuralgic pain in the left side of the forehead, and the following day there were several vesicles. The eruption extended to the whole left side of the forehead and into the scalp, and at his first visit there were also about twenty vesicles on the upper lid, the left side of the nose and anterior to the ear, and the latter area was considerably swollen. The following day the vesicles were somewhat flattened and the edema had vanished, but the pain was still severe. On the fourth day, while the lesions had improved, the pain had not, and I began to wonder if this case was going to prove that there was no such thing as a specific. There was also moderate conjunctivitis, and the patient had had nausea and vomited. I again administered sodium iodide, and the next day the pain suddenly lessened. On the seventh day there was practically no pain, and the skin was greatly improved, but there was some pus under several crusts. Three days later he showed great improvement. I removed all the crusts—a few black ones showed that gangrene had occurred—and prescribed 2½ per cent ammoniated mercury ointment for the suppurating areas. Three days later two lesions had not quite healed, and he still had occasional mild neuralgic pains. I therefore gave him the fifth injection. He then improved rapidly; the pains ceased, and the skin became normal within sixteen days after his first visit.

CASE 7.—On Oct. 31, 1929, I was consulted by a woman, aged 53, who, two days previous to her visit, had noticed a vesicle on the left malar prominence. More vesicles had appeared till there was a patch the size of a quarter with a red halo around it. Considerable burning accompanied the eruption. Sodium iodide was administered. The following day there was practically no pain, the vesicles were much flattened and the redness had decreased. On the seventh day I removed one thin crust; there were no vesicles, merely some redness. I therefore omitted the fourth treatment.

CASE 8.—On Feb. 1, 1929, Dr. Homer W. Smith of this city, led by what he had heard from me concerning this treatment, employed it in the case of a woman over 60 years old who had been suffering from zoster for a week. She had had a severe attack, involving the left side of the face and scalp, and had fever and constitutional symptoms as well as severe neuralgic pain. He administered 2 Gm. of sodium iodide. In twenty-four hours the pain had entirely ceased, and the lesions had faded away "like the effect of the first dose of arsphenamine on syphilitic lesions, only much more rapidly." She refused to take the third treatment, as she had so nearly recovered by the fourth day.

CASE 9.—This case of Dr. Lawrence Nacey was one of over three months' duration, and is the only one, to my knowledge, in which the remedy has been tried for the distressing neuralgic pain which rather frequently follows attacks of zoster. The patient, a Catholic Sister, aged 55, had had a severe ophthalmic zoster the previous October, involving the right side of the forehead, the upper lid and the eyeball, there being pronounced conjunctivitis and one corneal ulcer. On February 11, the ulcer had cleared up, leaving a small scar; there were numerous small, red areas on the forehead and excruciating pain, so that she was unable to sleep much. Dr. Nacey, on my suggestion, administered 2 Gm. of sodium iodide. The next day the pain had greatly diminished, and she was quite comfortable. Through some misunderstanding, Dr. Nacey did not give another treatment until a week later, and the pain had recurred. The redness on the forehead had faded away at this time. After the second treatment, the pain ceased, and she has had none since then.

ADDITIONAL CASES [1]

CASE 10.—On March 7, 1930, a man, aged 30, came to my office with several vesicles in an area about ½ inch in diameter underneath the right side of the lower lip. There was also pronounced burning. The diagnosis was herpes zoster. Treatment consisted of the injection of 2 Gm. of sodium iodide. On March 8, the vesicles at the top of the lesion were drying; there were a few fresh vesicles below the original lesions; sodium iodide was administered intravenously. On March 10, all of the lesions were desiccating; sodium iodide was given. On March 14, the lesions were nearly dried and there was no redness; no treatment was administered. On March 24, the lesions had cleared up.

This case may have been one of simple herpes, but I believed it to be zoster.

CASE 11.—On April 11, 1930, a woman, aged 22, consulted me. She had had neuralgic pain and vesicles at the back of the neck three days previously. The next day severe tenderness and pain developed in the muscles of the right side of the neck and shoulder and she could not raise the arm or turn the head toward the right. On examination, there were two oval areas of vesicles, one an inch from the midline, the other almost central. A diagnosis of herpes zoster was made. I administered 2 Gm. of sodium iodide and employed the quartz light. The next day the vesicles had flattened considerably, but the pain in the muscles and the lameness had not improved. Sodium iodide was again administered. Two days later the pain had nearly ceased and the lameness had practically disappeared, so that the patient could dress her hair. The lesions were more flattened and scaling. Sodium iodide was given. On the seventh day, I removed the crusts. The patches were slightly scaly, and I prescribed a 2.5 per cent ammoniated mercury ointment. Sodium iodide was omitted as the attack seemed aborted.

CASE 12.—On May 10, 1930, Dr. Walter A. Calihan of this city treated a woman, aged 58, who had a rather severe cervical zoster. The pain diminished immediately, and the vesicles started to desiccate. The symptoms cleared up in ten days.

CASE 13.—A man, aged 36, came to me on Sept. 4, 1930. Six days previously he had had tenderness at the lower border of the ribs on the right side. Two days previously an eruption had appeared. He complained of severe pain from the spine to the sternum. There was a moderate herpes zoster extending from the spine to the anterior midline, there being about forty lesions, more pronounced

1. In these cases the patients have been treated since this paper was read.

anteriorly. He received the routine treatment. The second day there was less pain and the lesions had begun to desiccate. On the fourth day, he was comfortable, although he had some exacerbations of pain. On the seventh day, he said that he had been free from pain for two days, although the anterior and posterior areas were tender, there being pain on pressure and on bending. The patient was discharged on the thirteenth day.

CASE 14.—An attorney, aged 37, consulted me on Nov. 24, 1930. One week previously he had had pains in the back and the left hip and buttock. Four days previously an eruption had appeared in the same areas and, later, on the left heel and the left sole. On examination, I found herpes zoster of the left buttock, thigh, heel and sole. There was considerable neuralgic pain. Treatment consisted of the administration of sodium iodide and dusting powder. The next day there was much less pain, and the patient felt much better. The vesicles were drying and flattening. Sodium iodide was given. Two days later there was very little pain; sodium iodide was again administered. Three days later there was practically no pain and the vesicles were dry; sodium iodide was given. A week later I removed five crusts; the skin beneath the crusts was dry. The patient was then discharged.

CASE 15.—On Nov. 28, 1930, a nurse, aged 30, married, consulted me, with the following history. One week previously she had used Vapo-rub on the left side of the neck for neuralgic pain. The next day she found some vesicles at the inner extremity of the left clavicle and at the top and back of the left shoulder. A diagnosis of herpes zoster was made. There were severe neuralgic pain and considerable lameness. Treatment consisted of the administration of sodium iodide, quartz light and dusting powder. The following day the lesions had greatly improved, desiccation was well under way, and the pain had nearly vanished. Sodium iodide was given. Two days later there was a slight burning in one area anteriorly, but the lameness in the neck had disappeared. Sodium iodide was again administered. On the seventh day, she had neither itching nor burning, and she felt perfectly well. The lesions had practically cleared up, except for a few crusts, which I removed, finding a dry surface. Sodium iodide was not administered. On the eleventh day, the eruption had disappeared, except for some pigmented areas, and there was no sensation.

COMMENT

There were four orbital cases, involving the ophthalmic nerve, and in these one is always apprehensive concerning extension of the disease to the eye itself, with probable loss of vision.

Two of the patients had slight malaise following the first injection. In one case it is uncertain whether the fever should be attributed to the treatment or to the infection.

My routine treatment has been to administer a 20 cc. ampule, containing 2 Gm. of sodium iodide (Intravenous Products Company preparation), on the first, second, fourth and seventh days. Two patients received only two injections; four only three. All of the cases cleared up in from ten to seventeen days.

In all of the cases, except the seventh, I employed quartz light and a dusting powder consisting of zinc oxide, ½ ounce (15.55 Gm.),

camphor powder, 1½ drachms (5.85 Gm.), corn starch, 1 ounce (31.10 Gm.), and morphine sulphate, 3 grains (0.195 Gm.); I have used the same treatment for several years with little apparent effect, except some amelioration of the pain.

I cannot claim any originality for the discovery of this treatment, only its rediscovery, but I have not read anything concerning it since the time of its discovery, and it seems that such a series of cases should be reported.

As to the rationale of the treatment, I shall not attempt to be dogmatic. The ordinary effects of the iodides are not germicidal; they are supposed to cause lysis and release bacteria and to promote resolution of diseased tissues. However, in some conditions, especially when administered intravenously, they appear to have a direct action, e. g., in blastomycosis, actinomycosis and sporotrichosis, for which they are true specifics, and in gonorrheal epididymitis and rheumatism.

ABSTRACT OF DISCUSSION

Dr. V. Pardo-Castello, Havana, Cuba: A few years ago, among the great number of samples that we get nearly every day, I found a French preparation of sodium iodide that was recommended for painful conditions, among them arthritis. The representative of this manufacturer happened to be a friend of mine and I promised him to try it. I used it in treating a patient with herpes zoster, with marked relief from the condition, but the pain of the injection was worse than the pain of the zoster, and I gave it up after two more trials. After receiving the presessional volume, I tried the application of sodium iodide intravenously, and I wish to endorse the conclusions of Dr. Ruggles. There was remarkable improvement within a few hours. I gave the patient 2 Gm. of sodium iodide intravenously about 10 a. m., and he claimed that by evening the pain had improved, so it seems that the intravenous injection of sodium iodide is really worthy of trial.

POISONING FROM THALLIUM ACETATE

REPORT OF A CASE *

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P. L. R., a colored boy, aged 7 years, was admitted to the dermatology section of the Passavant Hospital dispensary, Pittsburgh, on Jan. 13, 1930, with an extensive typical tinea capitis of two weeks' duration. The results of the physical examination were negative except for hutchinsonian teeth. The Wassermann reaction of the blood was positive. The weight was 47 pounds (21.3 Kg.). The patient was advised to return to the clinic on the morning of January 16, after a very light breakfast.

On January 16, 0.16 Gm. of powdered thallium acetate, dissolved in water containing sugar, was administered orally. The dose of thallium is usually calculated on the basis of 8 mg. of thallium acetate per kilogram of body weight. The dose in this case was given on the basis of 20 Kg. instead of 21.3 Kg. The head was shaved on the following day. The rubbing of 5 per cent ammoniated mercury into the scalp daily, and the daily washing of the scalp with soap and water were prescribed.

The patient returned to the clinic on January 20, for observation. On January 24, he was unable to come to the dispensary because of weakness in the knees. He was seen at home, and was found to be resting quietly in bed, complaining of loss of appetite and inability to walk. The symptoms had begun on the previous day (seven days after taking the drug), with weakness in the legs accompanied by severe pain and inability to stand or walk. The child had been crying almost continuously, although at times he was listless.

Examination revealed a bilateral foot-drop of a mild degree, a slight decrease of the reflexes of both knees and a suggestive bilateral Babinski sign. He was able to walk across the floor with little difficulty. The child was kept in bed. A cathartic and sodium thiosulphate, 7½ grains (0.49 Gm.) daily, were prescribed.

On January 27, the patient returned to the clinic appearing toxic and fretful; he was unable to walk across the floor without assistance. The condition became gradually worse on the following day, but on the morning of January 29, the patient showed some improvement. He became a little more rational. There was improvement in the strength of the extensor muscles of the lower extremities. The knee jerks were absent. There was no ankle clonus. The action of the heart, however, was rapid, and the pulse was poor. The incontinence of urine and feces persisted. The spasmodic twitches extended to the muscles of the entire body. The patient was still agitated; he cried out spontaneously; the condition showed a picture of encephalitis.

That afternoon the patient became rapidly worse, very toxic and semicomatose; he did not respond to questions. The possibility of a syphilitic encephalitis was considered, but the acute onset and the signs and the symptoms were against syphilis as the etiologic factor, and the consensus remained "a toxic peripheral neuritis and encephalitis due to thallium acetate poisoning."

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The Wassermann test of the blood made on January 13, ice box fixation being employed, showed: with cholesterolized antigen, +4; with acetone insoluble lipoid antigen, +3. The quantity of the blood used was not sufficient for the heat fixation test. The Kahn precipitation reaction was +1.

On January 27, urinalysis showed the urine straw-colored, alkaline, with a specific gravity of 1.014, a cloudy sediment and many phosphates. On January 30, it had a yellow color and an acid reaction. There was not a sufficient quantity for a test for the specific gravity. There was a slight trace of albumin, but no sugar or sediment; there were many granular casts, fine and coarse, and a few white blood cells and red blood cells.

On January 29, the examination of the blood showed: red blood cells, 4,440,000; white blood cells, 13,400; hemoglobin, 85 per cent; polymorphonuclears, 71; lymphocytes, 23, and large mononuclears, 6.

On admission to the hospital, the temperature was 99.6 F., the pulse rate 120 and the respiration 24. On January 28, the temperature was 104 F., the pulse rate 120 and the respiration 32. On January 29, the temperature was 100 F., the pulse rate 124 and the respiration 28. On January 30, the axillary temperature was 102 F., the pulse rate 130 and the respiration 32. On the evening of January 30, the temperature was 99.6, the pulse rate 118 and the respiration 30.

The neurologist reported: "A definite weakness of both lower extremities and decreased knee jerks. The impression now is that anterior poliomyelitis or some other form of motor paralysis is present."

The patient was admitted to the pediatric ward of the hospital for observation. The results of further investigation of previous history were negative, except that the mother was being treated for latent syphilis, and had also been treated for erysipelas.

Restlessness rapidly increased, and the patient became semistuporous. The examination several hours after admission showed the temperature 99.8 F., the pulse rate 120 and the respiration 24. The patient was lying in bed with both legs flexed, frog fashion, apparently semiconscious, and howling ferociously from time to time. There were several patches of tinea capitis. The pupils were equal, reacting to light and in accommodation. The throat and tonsils were slightly injected. There was no cervical adenitis. The neck was somewhat, but not definitely, rigid. Fetor oris was marked. The heart and the lungs were normal. The abdomen was scaphoid; the liver, the spleen and the kidneys were not palpable. Deep palpation in the right upper quadrant caused the patient to react sufficiently from his semicomatose state to cry aloud. There was a bilateral positive Babinski sign. No ankle clonus was present. Both knee reflexes were absent, and they remained absent until after a spinal puncture was performed and about 20 cc. of fluid was withdrawn on January 29, when they became sluggishly present.

Sodium thiosulphate was administered intravenously in 0.5 Gm. doses daily, and 7½ grains (0.49 Gm.) doses twice daily were administered by mouth. Chloral hydrate, 10 grains (0.648 Gm.), with sodium bromide, 20 grains (1.29 Gm.), by the rectum, were administered for the restlessness, and codeine sulphate, ¼ grain (0.016 Gm.), was given hypodermically when necessary.

That evening, the patient became more toxic and delirious, and he did not respond to questioning. There were twitchings of the facial muscles. Cervical rigidity was absent. Knee jerks were also absent. Examination showed that the heart and the lungs were normal. A spinal puncture, draining about 20 cc. of fluid, decreased the restlessness to some extent. Later the patient had incontinence of

the urine and feces. He refused to take food or fluids by the mouth, and he retained very little that was given by the rectum.

A lumbar puncture was performed again on January 29, about 15 cc. of spinal fluid being removed. This was followed by a slight decrease in the restlessness.

The globulin in the spinal fluid was increased; the fluid was clear and colorless; the colloidal gold curve was 2333432100. The Wassermann test of the spinal fluid, heat fixation being employed, showed a negative reaction with cholesterolized antigen and also with acetone-insoluble lipoid antigen. When the ice box fixation was used the test showed: with cholesterolized antigen, +1, and a negative reaction for acetone-insoluble lipoid antigen. A cell count was not made.

On January 31, the temperature was 102, the pulse rate 170 and the respiration 28. That evening the temperature was 101 and the respiration 32.

The patient became gradually worse. Cardiac stimulants were of no value. The lungs became congested; the heart failed rapidly, and on February 11, the patient died.

At autopsy, a culture of the heart's blood was positive for *Staphylococcus aureus* and *Streptococcus ignavus*.

A résumé of the observations of Dr. T. R. Hembold, the pathologist, follows: "A correlated gross and microscopic study showed a mild encephalitis with a peculiar necrosis of the liver and an acute nephritis superimposed on renal tissue showing an old chronic glomerular lesion. The patient was emaciated and showed signs of congenital syphilis. The lungs showed an early but diffuse pulmonary tuberculosis. On account of the dearth of knowledge of the toxic effects of thallium acetate, its relation to the lesions found cannot be stressed too much."

COMMENTS

1. Thallium acetate in the treatment for tinea capitis is a valuable, yet dangerous, drug. Previous deaths caused by the ingestion of the drug have been reported.

2. The congenital syphilis and the pulmonary tuberculosis, I believe, played no rôle in this case.

3. The onset of the symptoms one week after the administration of the drug, the neurologic manifestations, the acute nephritis and the necrosis of the liver are all evidences of extensive metallic poisoning.

4. The toxic encephalitis was the cause of death.

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AMERICAN LEISHMANIASIS

REPORT OF CASES OBSERVED IN BRAZIL *

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Since the publication in 1914 of McEwen's [1] paper entitled "Oriental Sore in the Americas," there has been a good deal of discussion regarding the type of leishmaniasis in the New World. Many investigators are now convinced that it differs sufficiently from the oriental sore of the Old World to warrant its being classed as a separate though closely allied disease. In recent years an extensive literature on American leishmaniasis has appeared, including more or less exhaustive monographs by Laveran,[2] Escomel [3] and Inchaustegui.[4] My object in this report is to point out differences between the forms of leishmaniasis mentioned and to cite some personal observations made during a recent trip to Brazil.

I am not concerned here with the visceral type of leishmaniasis known as kala-azar and caused by *Leishmania donovani.* I am interested at present only in the types of leishmaniasis that affect the skin. The disease of the eastern hemisphere, known under many names, such as aleppo boil, biskra button, etc., is conveniently called oriental sore. The organism which is now generally agreed by all to be its cause was first accurately described by Wright [5] in 1903, and is known as *Leishmania tropica.* A morphologically similar organism was first found in Brazilian cases of leishmaniasis by Lindenberg [6] and by Carini and Paranhos [7] in 1909. The organism was named *Leishmania braziliensis* in 1911 by Vianna, who considered it a separate species, whereas Laveran and Nattan-Larrier [8] thought it a variety of *L. tropica,* calling

* Submitted for publication, March 1, 1930.

* Read at the Fifty-Third Annual Meeting of the American Dermatological Association, Cleveland, June 20, 1930.

1. McEwen, E. L.: Oriental Sore in the Americas, with Report of a Case, J. Cutan. Dis. **32**:275 (April) 1914.

2. Laveran, A.: Leishmianoses, Paris, Masson & Cie, 1917.

3. Escomel, E.: Leishmaniosis, Buenos Aires, Flaiban y Camilloni, 1917.

4. Inchaustegui, A.: De la Leishmaniosis Americana ye de la Ulcera de los Chicleros en Mexico, Thesis, Mexico, 1918.

5. Wright, J. H.: Protozoa in a Case of Tropical Ulcer ("Delhi Sore"), J. M. Research **5**:472, 1903-1904.

6. Lindenberg, A.: L'ulcère de Bauru ou le Bouton d'Orient au Brasil, Bull. Soc. path. exot. **2**:252, 1909.

7. Carini, A., and Paranhos, U.: Identification de "ulcère de bauru avec le bouton d'orient," Bull. Soc. path. exot. **2**:255 (May 12) 1909.

8. Laveran, A., and Nattan-Larrier: Contribution a l'étude de la Espundia, Bull. Soc. path. exot. **5**:176 (March 13) 1912.

it *L. tropica* var. *americana*. Although the disease is by no means confined to Brazil, the name *L. braziliensis* is now most commonly used for the American organisms. In view of the priority and amount of work on the subject by Brazilian investigators, as well as the great extent of the disease in Brazil, this name may, I think, be used with propriety.

The geographic distribution of leishmaniasis in the western hemisphere is wide, although confined largely to special areas. It includes North, Central and South America, particularly the latter. The disease is apparently present in every country of South America except Chili, being most prevalent in Brazil and Peru. It was first recognized in the Canal Zone by Darling and Connor [9] in 1911, where other cases have since been seen, coming from the neighboring republic of Panama. Few references are found to its occurrence in other parts of Central America, although recently Chacón [10] stated that in one year twenty cases were observed in Limon, Costa Rica. The only endemic region in North America appears to be Yucatan, Mexico. Leishmaniasis has also been observed in Martinique, West Indies. According to Escomel, the greatest incidence of the disease occurs in tropical regions between the equator and 10 degrees south latitude. However, it is recorded by Anderson [11] that American leishmaniasis (uta variety) is seen in Peru at altitudes of from 3,000 to 8,000 feet in "cold, deep and narrow valleys up the Eastern and Western slopes of the Andes."

American leishmaniasis is encountered most often in tropical damp regions with virgin forests or luxuriant vegetation and especially during the rainy season. In Paraguay the disease occurs among laborers in the forests or on tea plantations, and in Yucatan among those who are engaged in collecting chicle for the manufacture of chewing gum. The disease affects both sexes and may appear in persons of any age, although it occurs most frequently in adult males, owing to their occupation.

According to its geographic location, American leishmaniasis has received many names, such as Bahia ulcer, Bauru ulcer (Brazil) espundia and uta (Peru), Pian-Bois, forest yaws and bosch yaws in French, British and Dutch Guiana, respectively, and ear ulcer of the chicleros (Yucatan).

I am not concerned here with cases of oriental sore, which are casually seen in the Americas as importations from the Old World.

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9. Darling, S. T., and Connor, R. C.: A Case of Oriental Sore in a Native Colombian, J. A. M. A. **56**:1257 (April 29) 1911.

10. Chacón, A. L.: Cutaneous Leishmaniasis, Seventeenth Ann. Rep., United Fruit Company, Med. Dept., 1928, p. 183.

11. Anderson, D. E.: The Uta Disease as Seen in Peru in 1913, Seventeenth Internat. Cong. Med., London, 1913, Sect. 21, p. 309.

In 1927, Andrews [12] collected ten cases, seen in the United States and Canada in the previous four years, including four cases of King Smith [13] and two of my own.[14] Guy and Jacob [15] later reported a similar case.

SYMPTOMATOLOGY

The clinical types of the disease may be divided into those which involve the skin alone, constituting the great majority and those which involve in addition the mucous membrane of the nose and throat. A brief description of the cutaneous lesions follows: After an insect bite, some other traumatism, or without cause, the affected part becomes red, itchy and may vesiculate. These changes are rarely seen by the physician as the patients do not apply for treatment until the disease is advanced. Eventually, a papule or a nodule forms, which may remain unbroken, although as a rule it undergoes necrosis and ulceration. The ulcers are seen, as a rule, on the uncovered parts, particularly the face, ears and lower parts of the extremities. There may be one or several ulcers, and in rare cases they may be numerous. The ulcers are round or oval with a well demarcated, slightly raised border, often showing a narrow rim of induration. The secretion is not copious, but the lesions bleed freely on traumatism, and crusting may or may not be present. They are sluggish and only slightly tender, and the surrounding tissue is reddish and edematous. The lymphatic glands in anatomic relation with the ulcers are said to be somewhat enlarged and tender at the outset. The glandular involvement, however, is not a conspicuous feature of the disease. The ulcers eventually heal spontaneously, leaving indelible, whitish scars, which are usually soft and pliable. On the face and ears there is frequent severe mutilation.

In the minority of cases the lesions do not ulcerate but remain as papules or large nodules, some of them becoming papillomatous and verrucose. An unusual type is the lymphangitic, which causes a chain of lesions along the main lymphatic trunks of the extremities. Such cases are relatively common in French Guiana, according to Clarin,[16] who described nodules and ulcers appearing in the same patient, the lesions presenting different stages of evolution. Clarin considered the lymphangitic type to be different from both oriental sore and the common American type of leishmaniasis. Circinate and atrophic forms, which are rare, have been described by Escomel.

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12. Andrews, J. M.: Report of a Case of Oriental Sore in the United States, Am. J. Trop. Med. **7**:221 (July) 1927.

13. Smith, D. K.: Oriental Sore, Arch. Dermat. & Syph. **5**:69 (Jan.) 1922.

14. Fox, H.: Two Cases of Oriental Sore (Cutaneous Leishmaniasis), New York M. J. **6**:657 (Oct. 4) 1922.

15. Guy, W. H., and Jacob, I. M.: Aleppo Boil, Arch. Dermat. & Syph. **14**: 361 (Sept.) 1926.

16. Clarin, J.: La leishmaniose cutanée de la guyane, Thèse de Paris, 1926.

The involvement of the mucous membrane of the nose and throat in some cases of American leishmaniasis is not of itself sufficient ground for considering the American type a separate species. It is, however, a unique and striking feature and is of serious import owing to its chronicity and destructive tendencies. Bueno de Mirando was the first to describe this type of the disease in 1910, although credit for recognizing the similarity of the cutaneous form to oriental sore should be given to Juliano Morena (1895). The involvement of the mucosa is not confined to cases seen in Peru, where the disease is locally known as espundia. Such cases are seen in all parts of the Americas and constitute a special feature of the American disease in general. In Brazil, where the disease is common the term espundia is not used.

Statistics on the relative frequency of the mucosal type are hard to obtain. According to some authorities, estimates vary from 10 to 20 or even a higher percentage. Da Silveira[17] found involvement of the mucous membrane of the nose, throat and mouth in about 20 per cent of 15,000 cases in the state of Saõ Paulo. According to Klotz and Lindenberg,[18] "The lesions are more frequent than is usually credited, some even claiming that all untreated skin infections (by leishmania), will sooner or later give rise to mucosal involvement." This occurs from eight months to fifteen years after the appearance of skin lesions, according to the same authors, and in their opinion seems to be caused by metastasis rather than by direct transfer of the virus by the fingers. In favor of this suggestion is the long interval between the appearance of lesions of the skin and those of the mucosa, the latter frequently being seen when the cutaneous ulcers are healed or at least when they contain very few organisms. The absence of visceral lesions and the failure to find *Leishmania* in the blood, however, argue against the metastatic theory of origin.

The changes in the nasopharynx were described to me by Professor de Paula Santos, while he was presenting a number of patients. The disease, he said, invariably begins in the mucous membrane of the anterior third of the nasal septum. The nose is most frequently attacked, the pharynx next in frequency and the larynx less often. In rare instances, the mucous membrane of the cheeks and tongue is involved. The disease begins with congestion, followed by infiltration, with a punctate granulomatous appearance. Vegetation and superficial ulceration appear later, the commonest types being the infiltrative, vegetative and ulcerative. At times there is a dry, shiny, atrophic rhinitis, and rarely a verrucose type is observed. The cartilaginous

17. da Silveira, R.: Frequencia e Distribuicão da Leishmaniose em S. Paulo, Brasil-med. **34**:200 (March 17) 1920.

18. Klotz, O., and Lindenberg, H.: The Pathology of Leishmaniasis of the Nose, Am. J. Trop. Med. **3**:117 (March) 1923.

portion of the septum may be destroyed, the nose flattened and the face disfigured. According to Klotz and Lindenberg, "Nodule formation in the deep mucosa is the most prominent and important development in leishmanic infection of the nose." The three types of nodules (endothelial, necrosing and fibrosing) are merely stages of a common process, representing different periods of the infection.

Some striking clinical differences between oriental sore and American leishmaniasis have now been shown. In the great majority of cases, oriental sore heals within a year, the Arabian name Habel-seneh (button of one year) signifying this fact. American leishmaniasis, on the other hand, may last for many years if untreated. Oriental sore attacks the mucosae only on rare occasions, probably owing to direct implantation of the virus from without. Furthermore, oriental sore is invariably a benign disease, disappearing spontaneously and responding rapidly to treatment. American leishmaniasis, on the other hand, shows little or no tendency to spontaneous cure when the mucous membranes are affected. In patients with severe untreated cases of long duration, death may follow from cachexia. Treatment is effective, but in the mucosal type it must be continued with persistence for long periods. Finally, it is well known that an attack of oriental sore is followed by permanent immunity whereas this does not occur in the American disease.

Escomel,[19] who is a strong adherent of the duality of oriental sore and American leishmaniasis, gave long parallel columns differentiating the two diseases, including some criteria of doubtful importance. He also differentiated espundia (the ordinary nasopharyngeal American leishmaniasis) from uta, another type of the disease occurring in Peru. He expressed the belief that uta is to be distinguished from oriental sore by the failure of one attack to produce immunity. On the other hand, it differs from the mucosal type by not invading the mucous membranes except by continuity from adjacent skin lesions.

PARASITOLOGY

The organism that is the undoubted cause of American leishmaniasis is morphologically identical with *L. tropica,* which produces oriental sore. It is found in the affected skin and mucous membrane, within large mononuclear or endothelial cells or free in the tissue spaces. Less often it is seen in polymorphonuclear cells. It has never been observed in the peripheral blood. The organism is round or oval with a large trophonucleus and a small kinetonucleus resembling a short bacillus. On rare occasions it has been observed in tissues as a flagel-

19. Escomel, E.: La leishmaniose americaine et les leishmanioses en Amerique, Bull. Soc. path. exot. **22**:35, 1929.

late, the form which it assumes in cultures. As the same phenomenon has been noted by Lacava in oriental sore, this cannot be considered a differential point of any value. Slight differences have been claimed by various authors, Splendore thinking that the protoplasm stained more strongly by Giemsa stain and Wenyon noting more rapid growth in cultures. Laveran remarked, however, that there is no characteristic that differentiates the two organisms with certainty, although he added that this does not prove them to be identical.

Cultures of *L. braziliensis* were first made by Pedroso and da Silva in 1910, on the so-called N. N. N. medium of Novy, McNeal and Nicholle (blood agar slants). The parasites are obligatory aerobes and grow in flagellate form in the water of condensation. Noguchi and Lindenberg [20] also used a leptospira medium with success, claiming certain advantages, such as the growth of a large number of organisms and the viability for months without the necessity of making subcultures. The necessity for frequent subculture was probably responsible for the death of a culture given me by Dr. Oliveira da Fonseca. By the time I had returned to New York, the organisms were dead. Dr. da Fonseca expressed the opinion that cultures could be obtained in about 40 per cent of the cases of American leishmaniasis and stated that the organisms could be demonstrated more often by culture than by direct microscopic examination of smear preparations or histologic sections.

Morphologically, the flagellates in cultures of *L. braziliensis* cannot be distinguished from similar organisms of *L. donovani* or *L. tropica*. Recently, however, Mayer and Ray [21] experimented with cultures of *L. donovani, L. tropica* and *L. braziliensis,* using the medium suggested by Nöller for a number of flagellate organisms. The medium was solid, consisting of agar, 30, grape sugar, 20, and weakly alkaline Liebig bouillon, 1,000 parts, respectively. Macroscopically, the cultures "gave characteristic differences in growth," as shown by excellent illustrations.

The strongest evidence in favor of the duality of the viruses of oriental sore and American leishmaniasis is furnished by the immunologic investigations of Noguchi.[22] Rabbits were inoculated with cul-

20. Noguchi, H., and Lindenberg, A.: The Isolation and Maintenance of Leishmania on the Medium Employed for the Cultivation of Organisms of the Leptospira Group of Spirochetes, Am. J. Trop. Med. **5**:63 (Jan.) 1925.

21. Mayer, M., and Ray, J. C.: Züchtung und differential Diagnose verschiedener Leishmanien (Kala-azar orientbeule und brazilianische Leishmaniose) auf festen Nahrböen, Arch. f. Schiffs-u. Tropen-Hyg. **32**:277, 1928.

22. Noguchi, H.: Action of Certain Biological, Chemical and Physical Agents Upon Cultures of Leishmania; Some Observations on Plant and Insect Herpetomonads, Internat. Confer. Health Prob. in Trop. America, 1924, United Fruit Company, Boston.

tures of *L. donovani, L. infantum, L. tropica* and *L. braziliensis,* and the immune serums were tested for agglutinating effect on cultures of the respective organisms. It was found that the anti-Donovan and anti-infantum serums agglutinated *L. donovani* and *L. infantum* reciprocally; i. e., the two strains were serologically identical, agreeing with the present conception that kala-azar and infantile leishmaniasis are the same disease. The antitropica serum agglutinated only *L. tropica* and the antibraziliensis serum only *L. braziliensis.* Noguchi concluded that these "agglutination tests permit the separation of at least three distinct species of leishmaniasis: 1. *L. donovani* of kala-azar and *L. infantum* with their dominant visceral affinity. 2. *L. Tropica* with its essentially dermal affinity. 3. *L. braziliensis* of the New World with its pronounced mucodermal predilection."

Castellani, in discussing the presentation of Noguchi, said, "His investigations have clearly a highly important point, as they have shown that the Brazilian leishmania is different from *L. Tropica.*" Craig,[23] in discussing the relationship of the two organisms, said that the "recent work of Noguchi upon the immune reactions of these two species indicates that they are distinct."

The occurrence of other organisms in symbiosis with *Leishmania* is interesting and possibly important. The presence of associated diplococci, resembling gonococci, was first noted by Seidelin [24] and later by McEwen, Escomel, Cerveira and Inchaustegui in American cases and by Wenyon in oriental sore. A characteristic diplococcus was noted in four cases observed by Seidelin in Yucatan in which organisms of *Leishmania* were present. In two of the cases, the diplococcus was the only associated microbe. One of these was a nonulcerated lesion with apparently intact skin and nothing to suggest a secondary infection. The diplococci were free or enclosed in polymorphonuclear or large mononuclear leukocytes. There was considerable resemblance to gonococci morphologically, but unlike the latter organisms they were gram-positive. No cultures were obtained on ordinary mediums. Seidelin said that he felt inclined, therefore, "to regard this coccus as primarily associated with the leishmaniae in which case it would probably be of pathologic importance." Archibald,[25] in his excellent chapter on leishmaniasis, said, "There is a reason to believe that the destructive nature of the lesion may be attributed in part to other organisms living symbiotically in the tissues. Of these one is a diplococcus, closely resembling the gonococcus." Laveran considered that the microbic

23. Craig, C. F.: Parasitic Protozoa of Man, Philadelphia, J. B. Lippincott Company, 1926, p. 340.

24. Seidelin, H.: Leishmaniasis and Babesiasis in Yucatan, Ann. Trop. Med. **6**:295 (July 31) 1912.

25. Archibald, R. G.: The Leishmaniases, in Byam and Archibald: The Practice of Medicine in the Tropics, London, Frowde & Stoughton, 1922, vol. 2.

association in cases of American leishmaniasis merits careful study, as it may explain the clinical forms which distinguish this disease from oriental sore.

The method of transmission of American leishmaniasis has not yet been proved, although evidence points to some blood-sucking insect as the probable vector. Aragão [26] expressed the belief that in Brazil the disease is carried to man by a species of sand fly (*Phlebotomus lutzi*), an opinion held by many observers in São Paulo. Aragão called attention to the constant presence of this fly in endemic foci and added that organisms similar to *Leishmania* have been found in the digestive tract of sand flies. A close relationship, he said, is often observed between the sting of the sand fly and the appearance of leishmaniasis. He quoted the occurrence of a small epidemic in the city of Rio de Janeiro, which occurred in a section where sand flies were especially numerous but spared parts of the city where they were scarce. The work of Wenyon and the Sergent brothers in artificially producing oriental sore in man by the inoculation of infected *Phlebotomi* gives facts which, in his opinion lend weight to his theory. While suggestive, none of these facts can be considered conclusive.

There is no animal that is known to act as a reservoir for the parasites. Until recently, Pedroso [27] was the only one to have observed the disease as a natural infection in a dog. Another similar infection has since been seen in a dog by Mazza,[28] who also observed a lesion in a horse, in which *Leishmaniae* were present. The disease has been experimentally inoculated, according to Craig, in monkeys, dogs, cats and guinea-pigs, and with difficulty into rats, mice and rabbits. Montenegro [29] inoculated his own arm, obtaining a lesion which he considered to be leishmaniasis, although no organisms were found.

HISTOPATHOLOGY

Histologic studies by various observers fail to show any specially characteristic changes. In a recent report by Llambias and Mosto,[30] the authors considered the process in general to be an inflammatory one of chronic type, producing ordinary granulation tissue. The histologic picture is dominated by lymphocytes, mononuclear and connective

26. Aragão, H. de B.: Tegumentary Leishmaniosis and Its Transmission by Phlebotomi, Mem. do Inst. Oswaldo Cruz **20**:187, 1927.

27. Pedroso, A. M.: Local Leishmaniasis of Dog, Ann. paulist. de med. e cir. **1**:33 (Sept.) 1913.

28. Mazza, S.: Leishmaniosis Cutanea en el Caballo y Nueva Observacion de la Misma en el Perro, Bull. de Inst. de Clin. Quir. **3**:462, 1927.

29. Montenegro, J.: The Inoculability of Leishmania, Am. J. Trop. Med. **4**: 331 (May) 1924.

30. Llambias, J., and Mosto, D.: Leishmianosis Cutanea Americana, Rev. Soc. argent. de Biol. **2**:135 (May) 1926.

tissue cells of chronic inflammation, polymorphonuclear leukocytes, giant cells and eosinophils. Epithelial whorls (similar to those of epithelioma) are seen at times. There are marked epidermal changes, especially acanthosis. The blood vessels show no evidence of endarteritis

REPORT OF CASES

Tissue was obtained from three cases in São Paulo, two from ulcers and one from a nonulcerating papule. Histologic examinations were made by Dr. Walter J. Highman, whose report follows:

CASE 1.—This was a case of ulcer of the malleolus (fig. 6). A specimen (1322 *A*) was stained with eosin-hematoxylin and fixed in alcohol.

Examination under the low power lens showed the epidermis thickened and the pegs clubbed, snaring off the papillae and giving an appearance resembling that of tuberculosis verrucosa cutis, blastomycosis or any other vegetative infectious lesion. The papillae and upper area of the corium took the eosin stain faintly. A few collagen fibers showed, but prevailingly the background of the slide at this end was translucent, save for the outlines of vessels and a sparse infiltration. Deeper the collagen took the stain of normal intensity and a dense diffuse infiltration was seen embodying numerous dilated venules and arterioles. The arrangement of the infiltration was not in tubercles as in tuberculosis, nor in perivascular islands as in syphilis.

Examination with the high power lens showed the granular layer slightly thickened (hyperkeratosis). The rete and pegs were hyperplastic, and numerous mitoses were found. Marked intercellular edema was seen in these regions. The granular layer was increased in thickness, very strikingly so at certain points. All of these epidermal observations were usual in vegetative processes.

The cells seen in the edematous papillae and snared off papillary tips were chiefly a few fibroblasts. Where the infiltration was denser, fibroblasts were found in great numbers, mingled with a rich sprinkling of plasma cells, epithelioid cells and lymphocytes (some with huge nuclei) and a few eosinophils and neutrophils.

The vessels were dilated and showed marked swelling of the intima, but no changes in the media. There were none of the vascular changes suggestive of syphilis.

Another specimen (1322 *B*), stained with eosin-hematoxylin, was fixed in formaldehyde. The epidermis was not present. The infiltration was as described for the first specimen. No Leishman bodies were found with Giemsa stain.

The histologic picture was that of granulation tissue of the vegetative sort.

CASE 2.—This was a case of ulcer of the leg (fig. 5). A specimen (1323 *A*) was fixed in alcohol and stained with eosin-hematoxylin.

Examination under the low power lens showed no epidermis in this section, but the corium contained a diffuse infiltration and striking numbers of strands of organizing collagen as though cicatrization were occurring in the depths..

Examination with the high power lens showed essentially the same changes as in case 1.

Another specimen (1323 *B*) was fixed in formaldehyde and stained with eosin-hematoxylin.

Fig. 1.—A white man, aged 42, had an eruption of six months' duration, involving the nose and cheeks and consisting of a diffuse, red swelling with fine papular elevations. The mucous membrane of the nose was also involved.

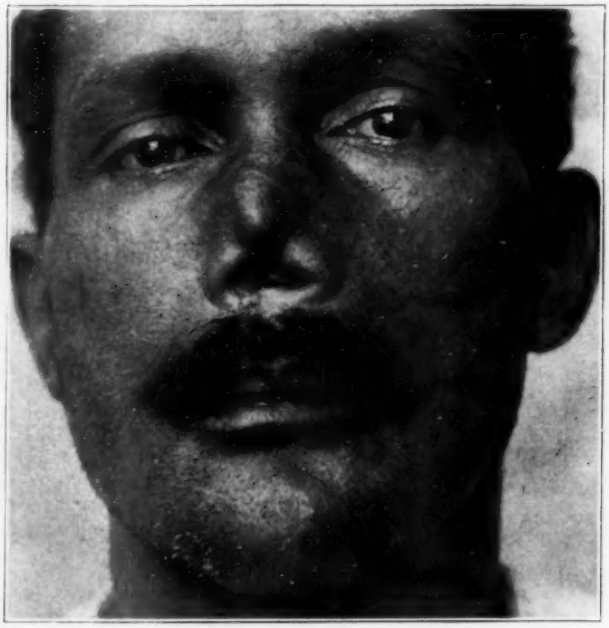

Fig. 2.—A white man, aged 30, had an eruption of one year's duration. It was of the nasopharyngeal type, showing destruction of the nasal cartilage. Marked improvement occurred under treatment with the amino-arsenol-phenol compound.

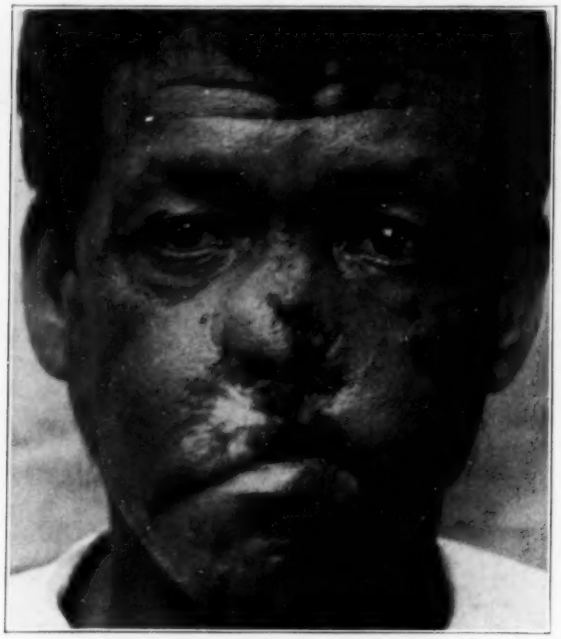

Fig. 3.—A white man, aged 50, had an eruption of eighteen months' duration. There was involvement of the nose, lip, pharynx and palate, with marked facial deformity. The lesions were practically healed.

Fig. 4.—A white man, aged 30, presented an eruption of thirteen years' duration. The disease was confined to the left ear, with destruction of cartilage. At present the disease is nearly healed.

Fig. 5 (case 2).—A Negro, aged 15, presented an eruption of five years' duration. There was a large, well demarcated, sluggish ulcer, with a slightly raised, hard border. There was a healed ulcer of the right leg. The nasal mucosa was affected.

Examination with the low power lens showed the epidermis present on one side of the section, bluntly terminating at the floor of the ulcer on the other side. There was marked hyperplasia of the epidermis, the pegs particularly looking longer and broader than normal. The infiltration in the corium was densest above the floor of the ulcer.

Fig. 6 (case 1).—A white man, aged 25, had an eruption of two years' duration. There was an ulcer of the malleolus, a common situation. There was a scar of a former ulcer on the leg, which healed spontaneously.

Examination with the high power lens showed essentially the same changes both in the epidermis and in the corium as were seen in case 1, but near the floor of the ulcer there were a large number of polymorphonuclear neutrophils.

No Leishman bodies could be seen with the Giemsa stain.

This section was also like granulation tissue.

CASE 3.—This was a case of generalized papular eruption (fig. 9). A specimen (1324 *B*) was fixed in alcohol and stained with eosin-hematoxylin.

Examination with the low power lens showed the epidermis thickened and altered in contour, looking like that seen in psoriasis or lichen simplex of Vidal. The infiltration was dense and high up on one side of the section, filling the papillary body and upper corium.

Examination with the high power lens showed that the minuter changes in the epidermis were substantially the same as in case 1.

Another specimen (1324 *A*) was fixed in formaldehyde and stained with eosin-hematoxylin. Nothing more was observed than in the previous cases.

No *Leishmania* were found with the Giemsa stain.

This lesion was a papule consisting of ordinary granulation surrounded by hyperplastic epidermis.

These specimens revealed more striking similarities than they do essential differences. In all, the epidermis was acanthotic, in one as

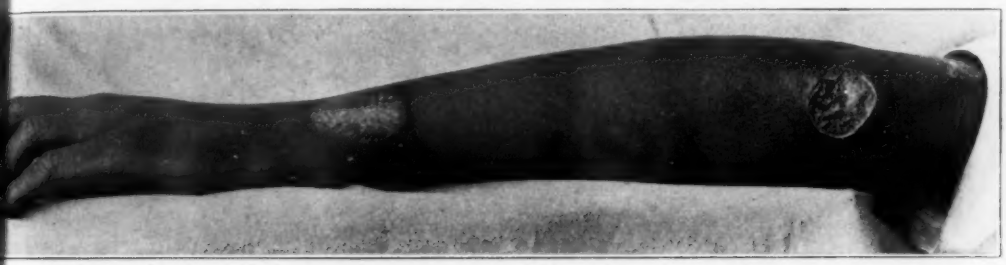

Fig. 7.—In a Negro, aged 29, the duration of the present attack was one year. He had a relapsing case; there was one active ulcer and one scar. Ten other lesions (ulcers or scars) were present on the face, arms and toes. The nasal mucosa was involved.

in an infectious vegetation (1322), in one as in any ulceration near the border (1323) and in one as in psoriasis or simple lichen (1324). The infiltration was uniform in its indeterminate aspect. There were no tubercles or syphilitic perivascular islands. The component cells were of all types, freely mingled, in no characteristic relationship to one another. Uniformly, there was vascular dilatation without engorgement and no hyperplasia of the media as in the case of syphilis. In short, the histology of these examples of Brazilian leishmaniasis was that of granulation tissue, as modified by the morphology.

DIAGNOSIS

In the differential diagnosis a number of diseases must be considered, including blastomycosis, yaws, syphilis, tuberculosis, sporotri-

chosis and uncinarial and common ulcers. Difficulty is increased by the simultaneous occurrence of one of these diseases with leishmaniasis. The differentiation from yaws and syphilis is aided by the Wassermann test and the response to arsphenamine. A point of distinction between blastomycosis and leishmaniasis is the entire failure of the former to respond to treatment by tartar emetic. Other common skin diseases may be associated with leishmaniasis, as in the extensive case of psoriasis reported by Buss.[31]

Intracutaneous tests appear to be of value in diagnosis. By using intradermal injections of an extract of *L. braziliensis,* Montenegro[32]

Fig. 8.—A Negro, aged 19, presented an eruption of four months' duration. The lesion was of the verrucose type, on an unusual situation. Three other crusted ulcers were present on the shoulder and forearm.

tested thirty-seven cases of leishmaniasis, thirty-two of which (86.4 per cent) gave positive reactions. Thirty-three of thirty-six controls gave negative and three gave doubtful reactions. The writer concluded that the reaction was specific when positive. Similar investigations were

31. Buss, G.: Psoriasis und Hautleishmianose, Arch. f. Schiffs-u. Tropen-Hyg. **32**:391, 1928.

32. Montenegro, J.: Cutaneous Reactions in Leishmaniasis, Arch. Dermat. & Syph. **13**:187 (Feb.) 1926.

later made by Buss [33] in thirty undoubted cases of leishmaniasis, the reaction being positive in each case. In three cases in which the clinical diagnosis was in doubt, the writer thought that it was "possible to decide in two with the greatest probability and in one case with cer-

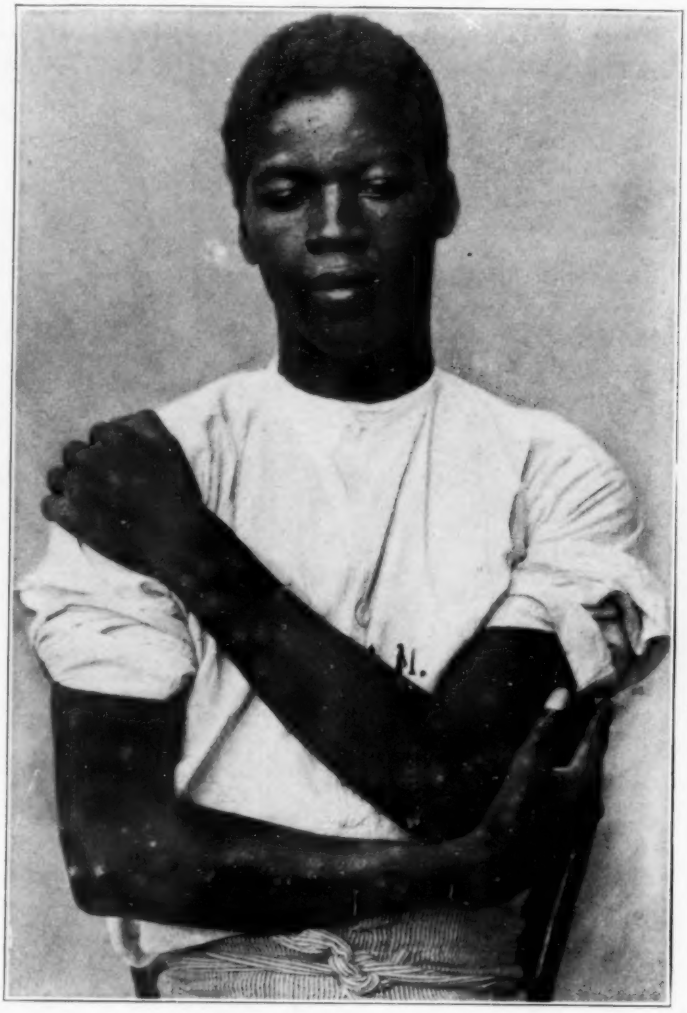

Fig. 9 (case 3).—A Negro, aged 23, had an eruption of five months' duration. For description see text.

tainty as to the diagnosis from the result of the intradermal tests." In ten controls there were eight negative and two doubtful reactions.

33. Buss, G.: Untersuchungen mit Leishmania-Vakzine, Arch. f. Schiffs-u. Tropen-Hyg. **33**:65, 1929.

TREATMENT

The treatment for cutaneous leishmaniasis has been revolutionized since the introduction of antimony and potassium tartrate by Gaspar Vianna in 1911. Its value by intravenous injection has been amply proved in cases affecting the skin. For lesions of the mucous membranes, its action has not been as satisfactory. Arsphenamine and neoarsphenamine have been used for this purpose with varying and often unsatisfactory results. In 1924, de Aguiar Pupo [34] experimented with a French preparation containing a solution of amino-arseno-phenol,

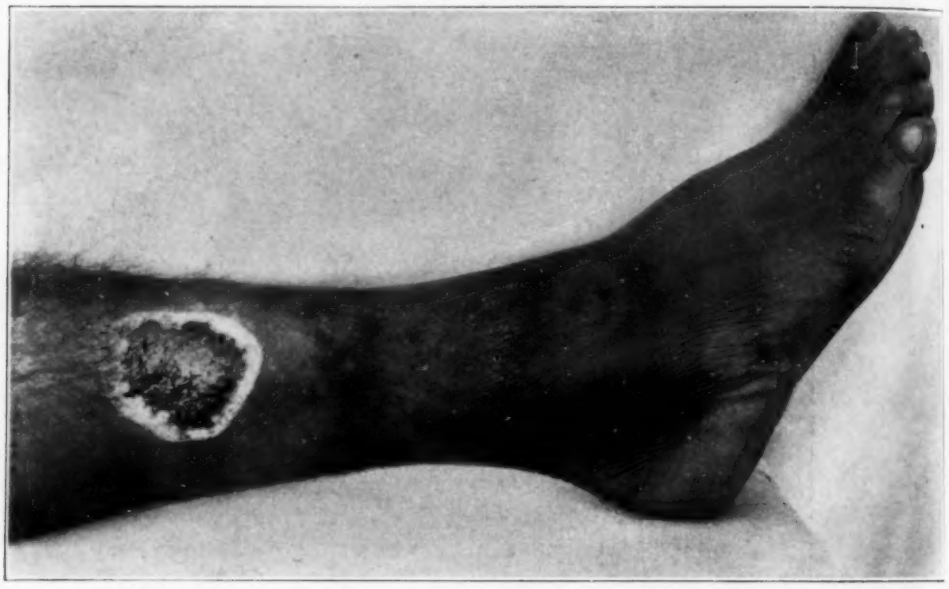

Fig. 10.—Negro, aged 23. Duration six months. Ulcer showing tendency to heal with treatment.

dextrose, neutralized with piperazine and obtained such encouraging results that at present this drug is in constant use in São Paulo and is thought to be the most effective remedy for treating lesions of the mucous membrane. The drug is said to be the same as preparation no. "592," so called, of Ehrlich. The cost of this remedy alone prevents its superseding antimony and potassium tartrate entirely for mucosal lesions.

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34. de Aguiar Pupo, J.: Tratamento da Leishmaniose de Mucosa Pelo "Eparseno," Sciencia med. **4**:31, 1926.

PERSONAL OBSERVATIONS

During my visit to São Paulo, I was fortunate in being able to see about fifty cases of leishmaniasis in the service of Professor Adolpho Lindenberg at the Santa Casa Hospital. Unfortunately, Professor Lindenberg was in Europe at the time of my visit, but I was shown every possible courtesy by his first assistant, Dr. Martins de Castro, who gave me permission to publish the following material. I was told that about 70 per cent of the beds in this service were usually occupied by patients with leishmaniasis. The large material seen in this

Fig. 11.—A white boy, aged 12, presented an eruption of two years' duration. There was a depigmented, soft, pliable scar about the malleolus. There were numerous other scars of healed ulcers, one somewhat keloidal.

hospital is shown by a statement of de Aguiar Pupo,[35] that from January, 1914, to June, 1920, there had been 1,594 of these cases, representing 80 per cent of the total number of patients with skin diseases who were hospitalized.

Of the fifty cases which I saw, histories and photographs were taken of seventeen. The patients were all males, varying from 12 to 50 years

35. de Aguiar Pupo, J.: A Leishmaniose Tegumentar em São Paulo, Ann. paulist. de med. e cir. **11**:60 (July-Aug.) 1923.

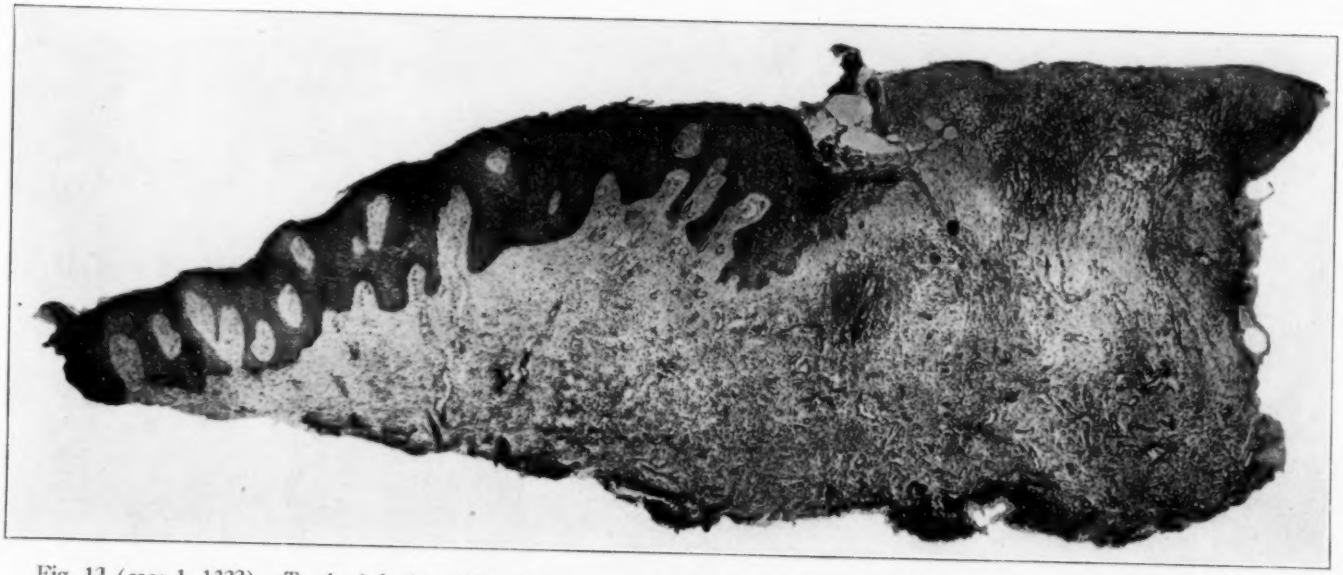

Fig. 12 (case 1, 1322).—To the left the epidermis is seen and to the right the floor of the ulcer. The snaring off of the tips of the papillae is clearly indicated, as well as the stumpy abuttal of the epidermis against the ulcerated area. The infiltration is vaguely indicated because of the low magnification, in the depths of the section as well, of course, as in the ulcerated area. The high degree of vascularity is also clearly shown.

Fig. 13 (case 3, 1324).—The left of the field shows the epidermis simulating psoriasis or lichen. The right of the field shows the epidermis as it is increased in bulk and contour in verrucous vegetative processes. In the elbow between these two types of epidermis is seen a mass of infiltration carried along to the right and a trifle below the fungating epidermis.

of age, averaging 25.5 years. Ten were negroes, mostly of dark color, and seven were white; all were farm laborers or lumbermen. The duration of the disease varied from two months to five years, the average being seventeen months. If the case of extensive papular eruption to be described later is omitted, the number of lesions for each case averaged 3.3. The mucous membranes were involved in ten cases (60 per cent). The location of the disease in four cases was the nose, cheeks or lips. The patients showed destruction of the cartilaginous portion of the septum. One case presented a single lesion of the ear suggestive of the cases of ulcers of the ear reported in Yucatan. Two lesions were noted on the chin and two on the shoulder. The majority of lesions were on the extremities, especially the lower, at points distal to the knees and elbows. Most of the cutaneous lesions were ulcers in varying stages of development. Some of the patients were under treatment with antimony and potassium tartrate and others with the amino-arseno-phenol compound. Three of the patients were in the hospital on account of relapses, one of them being there for the third time.

One case of especial interest was that of a negro, aged 23, who presented a generalized, symmetrical, scaling, papular eruption of six months' duration. There were perhaps 200 lesions, varying in size from that of a pea to that of a lima bean, on the face and extremities, especially the distal portions. The lesions were round or oval, and many were elevated and covered with grayish-white scales. On the face there were superficial and slightly depressed scars, which were mostly hyperpigmented. The lesions were neither tender nor itchy. The disease was present in the nasal mucosa. There was slight inguinal adenopathy, but no enlargement of the cubital or posterior cervical glands. The eruption simulated a resolving papulosquamous syphilid, although there were no other signs or symptoms indicative of syphilis. Leishman bodies were found in great abundance in the lesions, but after a single injection of antimony and potassium tartrate none could be demonstrated. I asked Dr. Martins de Castro how the eruption could be differentiated clinically from syphilis, the same question having been asked by Dr. Darier, who had recently visited São Paulo and seen this case. The answer was that previous to treatment the individual papules were surrounded by a reddish areola, which disappeared promptly after the administration of antimony and potassium tartrate.

Another case of interest was that of a young child seen in the service of Professor Rabello in Rio de Janeiro. This was a severe type of involvement of the mucous membrane with marked facial deformity, the special interest being the age of the patient.

SUMMARY AND CONCLUSIONS

Clinical, epidemiologic and pathologic features of American leishmaniasis have been reviewed. It has been shown that the disease, although affecting special localities, is widespread throughout South America and occurs to a much less extent in Central America and Mexico. It has not become endemic in the United States or Canada. The recognition of the causative organism has made it possible to differentiate the disease from blastomycosis, yaws and many other diseases with which it was formerly confused. As an aid in differential diagnosis, intradermic tests appear to be of value.

There is strong evidence that American leishmaniasis and oriental sore, which differ clinically, are due to distinct species of *Leishmania.* The American disease was probably present before the discovery of the New World by Columbus. It differs from oriental sore in its varied and much longer course, its failure to produce immunity, the involvement of the nasopharynx in from 10 to 20 per cent of the cases, its greater resistance to treatment and the causation at times of cachexia and death. Oriental sore is a much milder disease, confined to the skin, responding readily to treatment, never causing death and invariably producing permanent immunity.

Although the microscopic appearance of the organisms of the two diseases is similar in smear preparations, histologic sections and cultures, it has lately been shown that the gross appearance of cultures on solid mediums may be different. Noguchi has shown definite immunologic difference by agglutination tests. It seems probable, therefore, that *Leishmania tropica* found in oriental sore and *Leishmania braziliensis* found in the American disease are distinct though closely allied organisms.

The presence of other organisms, such as a special diplococcus living in symbiosis with *Leishmania,* may have some bearing on the clinical variations in the two diseases. Nothing is definitely known about the transmission of the disease, although suspicion points toward a species of sand fly (*Phlebotomus*).

Personal observations in São Paulo are cited, one of the cases mentioned, an unusual one, having perhaps 200 lesions which closely simulated a papular syphilid. Histologic examination of tissue from these cases showed evidence of chronic inflammation without any characteristic changes.

The disease should be called American leishmaniasis, and all local names such as espundia, uta, Bauru ulcer, etc., should be discarded.

I wish to express my thanks to Professor Lindenberg for the use of his material, to Dr. Martins de Castro for demonstrating his patients and giving me much valuable information, and to Dr. Oliveira da Fonseca for a microscopic preparation and culture of *Leishmania.*

114 East Fifty-Fourth Street.

ABSTRACT OF DISCUSSION

DR. JOSEPH J. ELLER, New York: I agree with Dr. Fox that the involvement of the mucous membranes in leishmaniasis is not a distinguishing feature so far as differentiating it from the European type of this disease is concerned. When I was in Madrid some years ago, Dr. Coviso demonstrated to me two cases of leishmaniasis of the mouth in two natives; and in the museum in Paris there is a moulage of leishmaniasis of the skin involving the mucous membranes of the nose and mouth.

DISSECTING CELLULITIS OF THE SCALP

(PERIFOLLICULITIS CAPITIS ABSCEDENS ET SUFFODIENS)*

ROBERT E. BARNEY, M.D.

CLEVELAND

In 1921, Wise and Parkhurst [1] described under the title, "A Rare Form of Suppurating and Cicatrizing Disease of the Scalp," a process involving the vertex characterized by numerous nodules ranging in size from that of a pea to that of a hazelnut. Some of these nodules were firm to palpation while others were fluctuant. Pressure exerted on a soft lesion caused a seropurulent discharge to be expressed from sinuses either at the base or at a distance of from 1 (2.5 cm.) to 3 (7.6 cm.) inches, indicating that the nodules had coalesced in the deep layers of the scalp. Some of the sinuses could be probed for from one-half (1.27 cm.) to 3 inches (7.6 cm.) with relatively little pain. The surfaces of the nodules showed no hair, while in the depressions between them the hair remained, but could be removed by slight traction.

This description corresponds to that of the cases previously recorded by Spitzer,[2] Nobl [3] and Ruete,[4] and in 1907, Hoffmann [5] presented such a case before the Berlin Dermatological Society, designating the disease "perifolliculitis capitis abscedens et suffodiens." The clinical features outlined characterize the case reports of subsequent investigators, although occasionally comedones are described as an additional feature. The disease is found only in males, usually between the ages of 20 and 40, although it has been described in a patient of 16 [6] and in one of 69.[7] The process is essentially chronic in its course,

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* Submitted for publication, Aug. 16, 1930.

* From the Department of Dermatology and Syphilology, St. Luke's Hospital.

* Read before the Section on Dermatology and Syphilology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930, and at the Fifty-Third Annual Meeting of the American Dermatological Association, Cleveland, June 19, 1930.

1. Wise, F., and Parkhurst, H. J.: A Rare Form of Suppurating and Cicatrizing Disease of the Scalp, Arch. Dermat. & Syph. **4**:750 (Dec.) 1921.

2. Spitzer, L.: Dermatitis follicularis et Perifollicularis conglobata, Dermat. Ztschr. **10**:109, 1903.

3. Nobl: Case Presentation, Arch. f. Dermat. u. Syph. **74**:80, 1905.

4. Ruete, A.: Ein Fall von Perifolliculitis capitis abscedens et suffodiens, Dermat. Ztschr. **20**:901, 1913.

5. Hoffmann, E.: Case Demonstration, Dermat. Ztschr. **15**:122, 1908.

6. Veiel, F.: Perifolliculitis abscedens et suffodiens und ihre Beziehung zur Acne conglobata, Dermat. Ztschr. **53**:674, 1928.

7. Hauck, L.: Beitrag. zur Aetiologie der Folliculitis et Perifolliculitis suffodiens et abscedens (E. Hoffmann), Dermat. Ztschr. **53**:275, 1928.

lasting months or years, and recurrences are common. After healing has taken place there remain variously sized atrophic scars together with firm elevated nodules and ridges. The appearance of the disease in its clinical course and after involution has taken place has been compared by many observers to the convolutions of the brain.

During the last year and a half I have had under observation a patient suffering from this peculiar disease.

REPORT OF CASE

History.—J. S., a colored man, aged 20, was admitted to the dispensary on Dec. 12, 1928, for examination of an eruption on the scalp. There was no history of cancer or tuberculosis in the family. His father, mother, four brothers and five sisters were living and well. Before coming to Cleveland he lived in Montgomery, Ala., working as a farmer. He said that he had not had syphilis or gonorrhea. He had always been in excellent health. The eruption began nine months before as a few "pus pimples" in the occipital region, which, uninfluenced by local medication, gradually spread. As the disease progressed, nodules and ridges appeared over adjacent portions of the scalp. Some of the nodules would soften and rupture spontaneously, discharging a thick purulent material which dried, forming crusts. The eruption reached its present extent two months after its inception. Occasionally, the patient noticed the appearance of new nodules. Four months before admission to the hospital, small swellings appeared in the neck.

Examination.—The patient was well nourished and well developed. Involving the scalp was an eruption occupying an oval area about 20 inches (50.80 cm.) in circumference with its center at the vertex. The process was made up of thirty or forty glistening, deep-seated, brownish-red nodules, varying in size from that of a small pea to that of a walnut, which were joined together by firm oval ridges about the size and shape of an ordinary lead pencil. These were elevated about one-half inch above the level of the surrounding scalp, giving a cerebriform appearance. Some of the nodules were thin, walled and fluctuant while others were firm to palpation. Pressure on a nodule caused a thick, purulent, sometimes serosanguineous discharge to be expressed from sinuses either at the base or at a distance of 2 or 3 inches (5 or 7 cm.), indicating that the adjacent nodules were in communication by undermining of the scalp. Some of the sinuses could be probed for a distance of 4 or 5 inches (10 or 12 cm.), with relatively little pain. The surfaces of the nodules showed only a few remaining loosely embedded hairs, and a few of the follicular openings were dilated and plugged with corneous masses. On the tops of many of the nodules were yellowish-white pustules the size of a pinhead. The depressions between the nodules were occupied in places by dried blood crusts. Here the hair for the most part remained, but was loosely embedded. An occasional depressed scar, of the size of a small pea, indicated a healed lesion (fig. 1). There was a marked cervical adenitis, ranging in size from that of a pea to that of an olive. The skin of the face and trunk revealed a pinhead-sized papulopustular eruption which proved on careful investigation to be an iododerma, and which promptly disappeared on removal of the drug. The results of a general physical examination were negative.

This unusual clinical picture indicated a purulent undermining cellulitis of the scalp with the formation of deep-seated abscesses. The patient was admitted to the hospital for observation.

Laboratory Observations.—The Wassermann and Kahn reactions of the blood were negative, and a complete blood count and urinalysis showed no abnormality. Guinea-pigs, inoculated with both tissue and pus, revealed no evidence of tuberculosis. The tuberculin reaction was negative. Roentgen examination of the lungs showed no signs of pulmonary tuberculosis. Various mediums inoculated with pus repeatedly showed pure cultures of *Staphylococcus albus.* Examination of the hair was negative for spores and mycelium, and inoculations made on Sabouraud's medium showed no fungous growth.

Fig. 1.—Nodules and ridges with scarring before treatment.

Treatment.—Treatment consisted of incision and drainage of the large abscesses, together with one and a half skin units of filtered roentgen rays (2 mm. of aluminum) in divided doses over a period of three months. In addition, the patient was given sixteen intramuscular injections of a nonspecific milk preparation at five day intervals (three injections of 5 cc., seven injections of 10 cc. and six injections of 15 cc.). A 5 per cent ammoniated mercury ointment was used locally. Under this therapy the purulent discharge gradually diminished, and four months following the institution of treatment no active areas of the disease remained. Six months after the cessation of treatment, an examination of the scalp revealed only a few dime-sized, depressed scars. This was in striking contrast to the apparently extensive area of destruction noted in the beginning.

Shortly afterward the hair of the head was closely clipped. This procedure emphasized the scarring and also revealed numerous firm nodules and ridges involving the sides of the head and to a lesser extent the vertex (figs. 2 and 3).

Histologic Examination.—For histologic investigation pieces of tissue for biopsies were taken from different lesions and at different stages of the disease.

Fig. 2.—Firm elevated nodules and ridges after the hair had been clipped.

The observations are arranged in the sequence best illustrating the development of the process. The tissues were stained with hematoxylin and eosin and Weigert's and Miller's modification of Unna's elastic stain. The gram-Weigert stain was used in the search for bacteria.

Biopsy 1: Ten months after all activity of the process had disappeared, a slight purulent discharge could be expressed from a fluctuant nodule. This was the first evidence of recurrence of the process. A piece of tissue for biopsy was

taken from this nodule and showed microscopically what is diagnosed as the earliest lesion of the disease.

The epidermis adjacent to one of the hair follicles showed a marked hyperkeratosis and acanthosis with a thickening of the rete pegs. The epidermis overlying the follicle, in addition to hyperkeratosis and acanthosis, revealed parakeratosis. This follicle, situated in the upper part of the corium immediately beneath the epidermis, showed a marked purulent destruction of the wall on one side with resultant abscess formation (fig. 4). This infiltrated area showed no elastic tissue. Discrete clusters of gram-positive cocci (staphylococci) were present within the follicle and also in the infiltrate surrounding it. The remainder of the papillary layer showed a small, round cell, perivascular infiltration. The reticular layer was occupied by a marked fibrosis with extensive vascularization. The capillaries were distended and showed a moderate perivascular round cell

Fig. 3.—Same as figure 2, side view.

infiltration. This fibrous tissue contained practically no elastic fibers. The fibrosis was the result of the preexisting deep-seated infiltrate seen in subsequent sections.

Biopsy 2: The specimen was taken from the top of a fluctuating nodule. The epidermis showed no abnormality. Throughout the papillary layer was a marked perivascular infiltration in which plasma cells predominated. One of the follicles was distended, and the lumen was filled with a corneous plug, fragments of hair and abundant cellular débris, in which large clusters of cocci were seen. In the lower part of the follicle was a marked leukocytic infiltration of the wall with accumulation of a small amount of pus and blood in the lumen. Deeper in the corium was a space containing a part of the hair, lined by a purulent granulation tissue. It was assumed that this space containing the hair was all that remained of the hair follicle. In the infiltrated area were foreign body giant cells and clumps of brown pigment. The infiltrate extended throughout the deep layers of the corium, but diminished in severity away from the destroyed follicle (fig. 5). This section showed the most severe reaction found in any of the sections

examined. It revealed a marked purulent folliculitis and perifolliculitis with disintegration of the hair and lower part of the follicle.

Another section was taken from the same specimen a short distance from the one just described and showed the wall of the same distended follicle, which

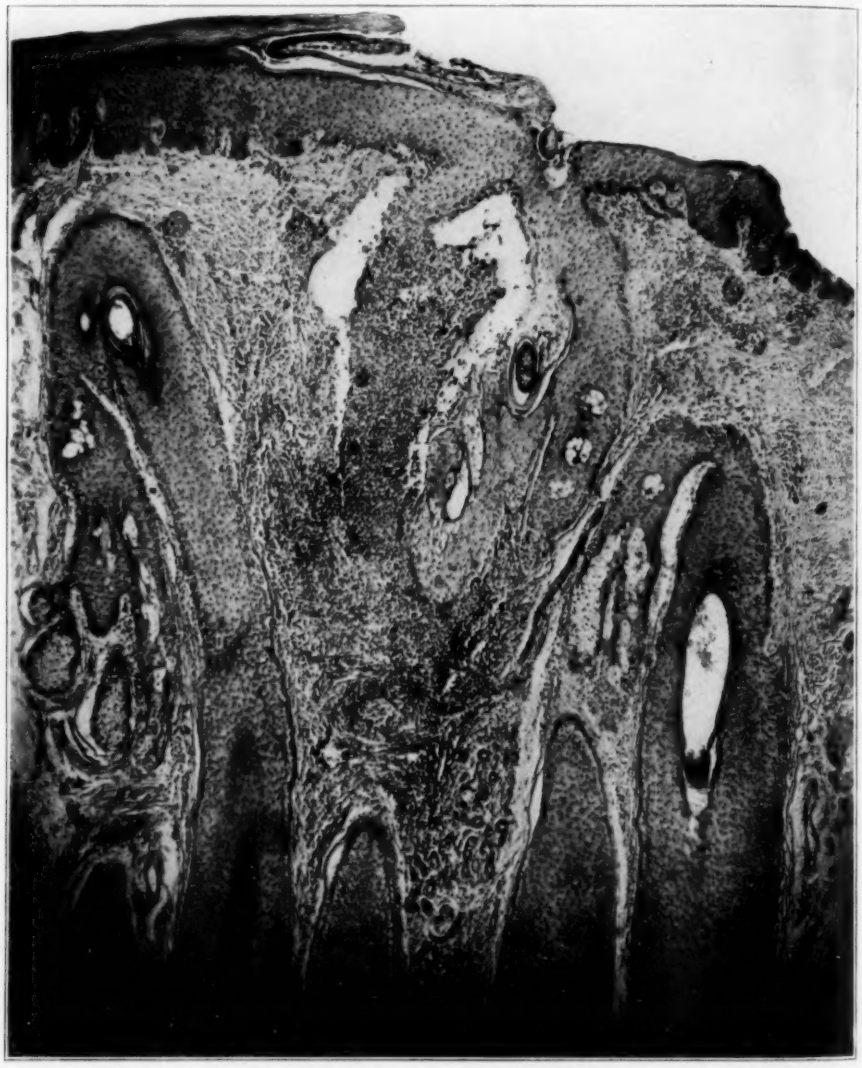

Fig. 4.—Photomicrograph showing an early follicular abscess.

appeared here as a cyst. The lumen of the cyst was filled with a corneous mass, disintegrated hair, cellular débris and numerous clusters of gram-positive cocci. The follicular wall showed a marked leukocytic infiltration and an abscess in one portion occupying about one fourth of its circumference. Surrounding the follicle was a marked inflammatory infiltration consisting of plasma cells, leukocytes,

small lymphocytes, eosinophils and foreign body giant cells. There were no elastic fibers in this infiltrate. In one area adjacent to this follicle was a small abscess. On the opposite side was another distended follicle which touched it, resulting in a fusion of the walls. In the deep layers of the corium was a marked inflammatory infiltrate similar to the one just described (fig. 6). Some of the giant cells in this inflammatory tissue contained a brown granular pigment, and in one there was a fragment of hair (fig. 7). This fragment stained bright yellow with trinitrophenol, and the pigment was distributed as in normal hair. In this infiltrate there were only small fragments of elastic tissue.

Biopsy 3: The specimen was taken from the border of a fluctuating nodule. The epidermis was normal. The papillary layer showed a mild inflammatory

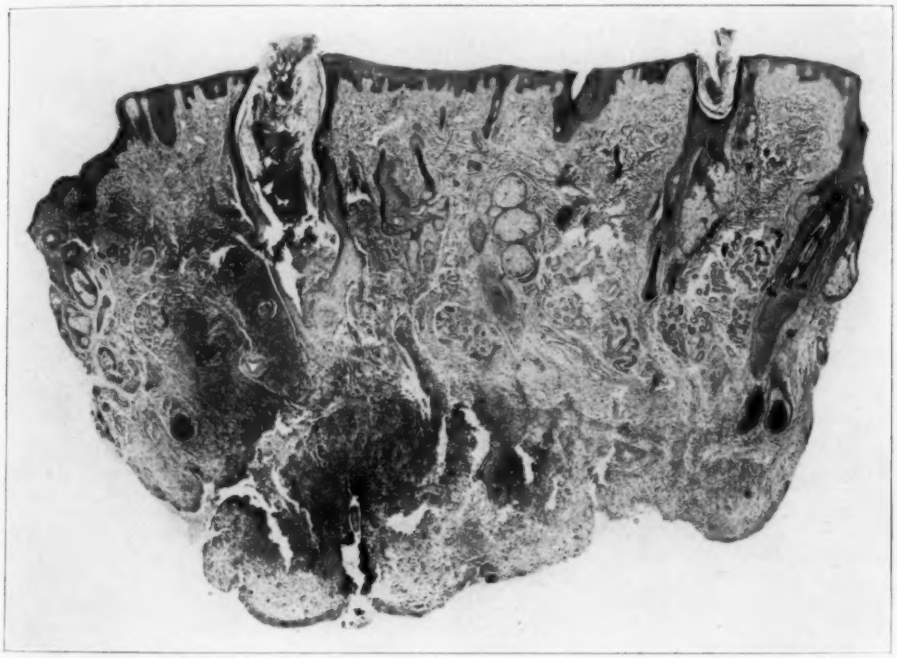

Fig. 5.—Severe folliculitis and perifolliculitis with destruction of the hair follicle.

reaction characterized by a perivascular, periglandular and perifollicular infiltration of small lymphocytes together with a few plasma cells. In a few small areas corresponding to some of the infiltrated areas in the hematoxylin and eosin preparation, the elastic tissue was absent. The lumina of a few of the hair follicles were dilated and filled with a shredded corneous material, but showed an absence of hair. The reticular layer was occupied by a marked chronic inflammatory infiltration, the upper border of which was well delimited. It was made up of newly formed distended capillaries, polymorphonuclear leukocytes, monocytes, eosinophils and an abundance of plasma cells. Here and there were clusters of giant cells, the cytoplasm of which showed a fine, granular, brownish pigment. There was a moderate fibroblastic proliferation, and the infiltrate showed an absence of elastic tissue (fig. 8). In addition, scattered throughout

the infiltrate were clumps of brownish pigment, the remains of disintegrated hair (fig. 9). Careful search for cocci in the chronic infiltrate of this and other sections was without success. The well delimited, deep-seated infiltrate indicated the way in which the process spread through the deep layers of the scalp. The next two biopsies, although the tissues were taken from different areas, showed essentially the same changes.

Biopsy 4: The tissue was taken from the depression between two nodules. The epidermis showed no abnormality. The papillary layer showed a moderate perivascular round cell infiltration. Half of the reticular layer of the corium was occupied by a chronic inflammatory infiltration made up of small round cells, plasma cells and giant cells together with clumps of brownish pigment. Here

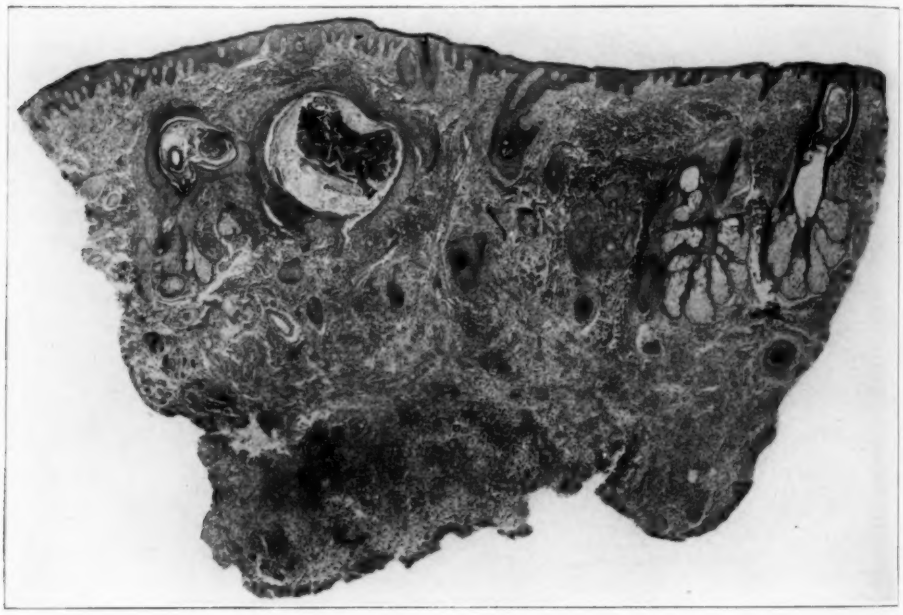

Fig. 6.—Photomicrograph, showing a follicular abscess with fusion of the follicular walls, perifolliculitis and cellulitis.

and there, areas of purulent infiltration were seen. The elastic tissue was absent in the areas of infiltration.

Biopsy 5: The tissue was taken from a firm ridge between two fluctuating nodules. The epidermis was normal. The papillary layer showed a mild perivascular infiltration of small round cells with a normal distribution of elastic fibers. The hair follicles were intact. Deep in the corium on one side was an inflammatory infiltration consisting of lymphocytes, polymorphonuclear leukocytes and eosinophils with a moderate fibroblastic proliferation. In this area there were only a few scattered elastic fibers.

Biopsy 6: The tissue was taken from a healed nodule. The papillary layer showed numerous follicles and a moderate perivascular infiltration which, although not marked, was more extensive than in the normal tissue taken for comparison. The elastic tissue was normal in amount. The lower part of the corium showed a marked fibrosis with extensive vascularization. The capillaries showed a mild

perivascular infiltration. In the area of fibrosis there were no elastic fibers. The absence of atrophy of the epidermis and the presence of hair follicles was striking when one takes into consideration the keloidal appearance of the lesion (fig. 10).

Summary of Histologic Observations.—The histologic study allowed the following conclusions to be made regarding the development of this disease: It began as a folliculitis with disintegration of the follicular wall. This was followed by a severe perifolliculitis with a purulent destruction of the deep part of the follicle and a disintegration of the hair. The process then spread into the deep layers of the scalp as a cellulitis, producing the undermining seen clinically. The

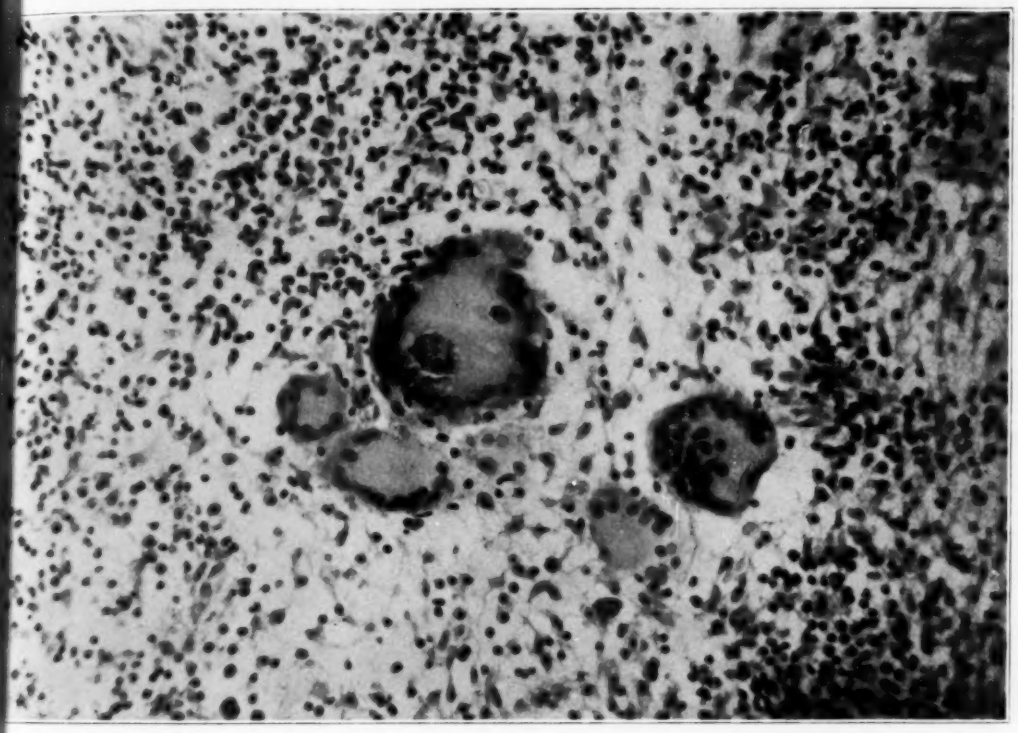

Fig. 7.—High power view of figure 6, showing a giant cell containing a fragment of hair.

chronic type of infiltrate, observed in the deep part of every section, characterized chiefly by small lymphocytes, plasma cells and giant cells, was in part due to the disintegration of hairs which acted as foreign bodies. The disintegration of hair appeared in the chronic infiltrate of every section either as small fragments or as clumps of brown pigment. The inflammatory process led to a deep-seated fibrosis.

DIFFERENTIAL DIAGNOSIS

Attention has been called to the similarity of the end-result in this disease to the scarring following pseudopelade and folliculitis decalvans. Some cases of healed perifolliculitis capitis may conceivably suggest this

comparison, but in cases revealing firm elevated nodules and ridges as terminal symptoms, this relationship would scarcely suggest itself. Furthermore, the diseases are entirely different in clinical appearance during their course. One never sees in folliculitis decalvans and pseudopelade the large abscesses with deep undermining of the scalp so characteristically found in perifolliculitis capitis.

The clinical similarity between perifolliculitis capitis and dermatitis papillaris capillitii has been repeatedly emphasized (Wise and Parkhurst,[1] Spitzer,[2] Nobl,[3] Ruete,[4] E. Hoffmann[5] and Hauck.[7] H. Hoffmann,[8] in a comprehensive review of the subject, stated that the histologic observations of the two diseases may also be similar. The

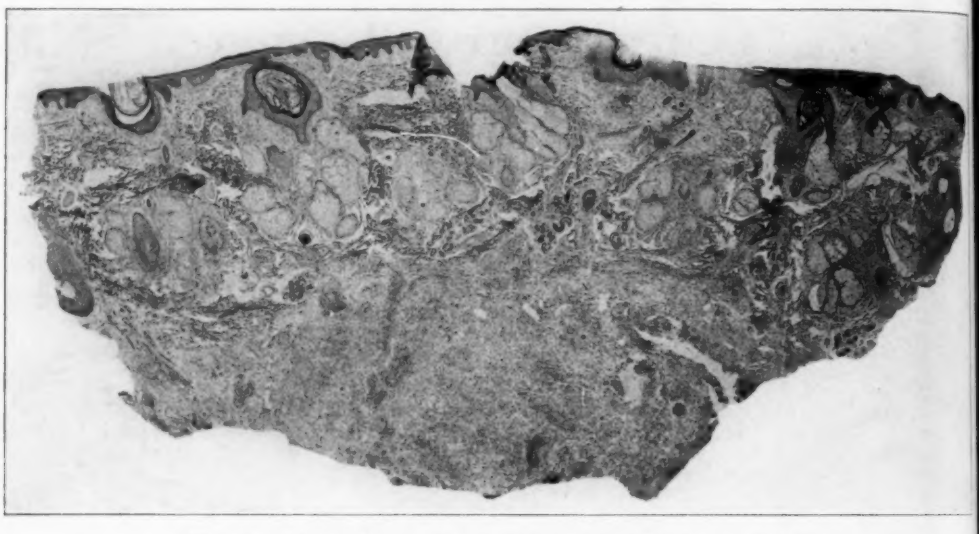

Fig. 8.—Photomicrograph, showing well delimited cellulitis.

cases recorded by Freund[9] and Koehler[10] were undoubtedly examples of perifolliculitis capitis, and the authors excluded dermatitis papillaris capillitii only after careful consideration. Ehrmann[11] expressed the

8. Hoffmann, H.: Acne conglobata und verwandte Krankheiten, Zentralbl. f. Haut- u. Geschlechtskr. **19**:1, 1926.

9. Freund, E.: Dermatitis papillaris capillitii Kaposi oder Narbenbildung nach chronischer Eiterung, Dermat. Wchnschr. **81**:1159, 1925.

10. Koehler, G. D.: Mitteilung eines eigenartigen Falles von unterminierter Narbenbildung am behaarten Kopfe nach chronischer Eiterung, Dermat. Wchnschr. **80**:170, 1925.

11. Ehrmann, S.: Ueber Sycosis (Folliculitis) sclerotizans nuchae und Acne conglobata nuchae (Lang), beziehungsweise Folliculitis capitis abscedens et suffodiens (E. Hoffmann), Wien. med. Wchnschr. **39**:853, 1926.

belief that the two diseases are different both histologically and clinically, an opinion also shared by Cueni.[12]

The variations in the clinical appearance of these processes seem definite enough to differentiate them. Dermatitis papillaris capillitii begins as papules or pustules, the size of a pinhead, usually involving the nuchal region. Later these lesions coalesce, forming keloid-like, papillomatous elevations studded with firmly embedded hair clusters. Perifolliculitis capitis involves chiefly the occiput or vertex, where it

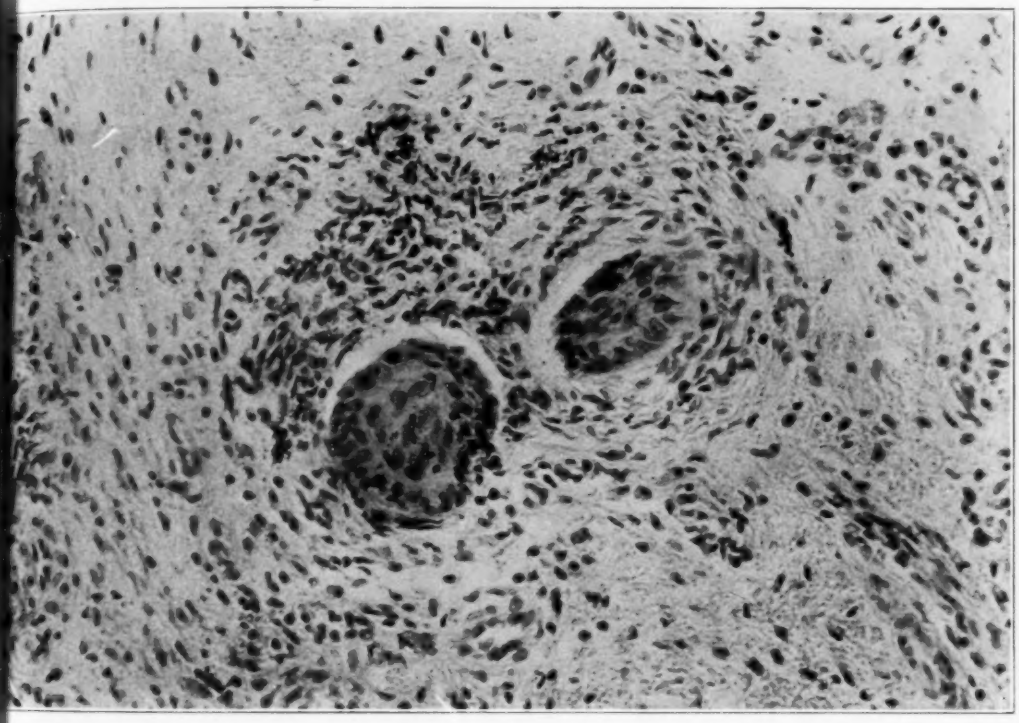

Fig. 9.—High power view of figure 8, showing a clump of pigment in the corium.

occurs as large fluctuant abscesses with deep undermining of the scalp. The hair in the involved area is loosely embedded. The tendency to connective hypertrophy so characteristic of dermatitis papillaris capillitii is not seen in perifolliculitis capitis. The differences seen clinically are also apparent histologically.

12. Cueni, S.: Zur Kenntnis der Pathogenese der Perifolliculitis capitis abscedens et suffodiens (E. Hoffmann und ihrer Beziehungen zur Acne conglobata), Dermat. Ztschr. **51**:94, 1928.

No definite conclusions have been reached in regard to the relationship between acne conglobata and perifolliculitis capitis. Spitzer's patient [2] with acne conglobata had in addition to the lesions on the body a process involving the scalp, which E. Hoffmann [5] accepted as typical of the disease described by him. Ehrmann [11] expressed the opinion that there are localized forms of acne conglobata, and that when the disease is confined to the scalp it is the same as perifolliculitis capitis. H. Hoffmann,[13] Cueni [12] and Smith [14] shared the same opinion. Smith [14] also included in the same group pyoderma chronica papillaris

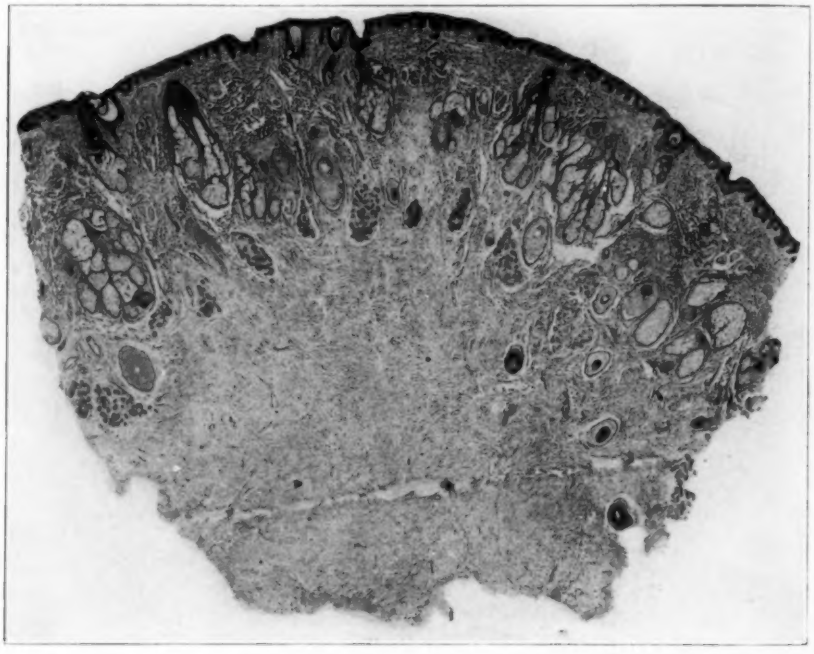

Fig. 10.—Photomicrograph of healed nodule, showing deep fibrosis.

et exulcerans. Other investigators described patients who, in addition to the process in the scalp, present typical lesions of acne conglobata on the body (Cueni,[12] Highman,[15] Veiel,[6] Hauck [7] and Shaffer [16]).

13. Hoffmann, H.: Acne conglobata (Folliculitis capitis abscedens et suffodiens), Zentralbl. f. Haut- u. Geschlechtskr. **6**:229, 1923.

14. Smith, J. F.: On a Form of Chronic Pyoderma, Brit. J. Dermat. **41**:49, 1929.

15. Highman, W. J., in discussion on Eller, J. J.: Perifolliculitis Capitis Abscedens et Suffodiens, Arch. Dermat. & Syph. **17**:272 (Feb.) 1928.

16. Shaffer, L.: Perifolliculitis capitis abscedens et suffodiens, Arch. Dermat. & Syph. **21**:139 (Jan.) 1930.

After a careful histologic investigation, Cueni compared his observations with those reported by Spitzer [2] in his case of acne conglobata and concluded that the two processes are the same.

The two diseases, both clinically and histologically, have points of similarity and of difference. In acne conglobata the comedone is a striking and constant feature. There are also large fluctuant abscesses over the body with undermining of the skin, and the lesions heal with the formation of so-called bridge scars. In perifolliculitis capitis comedones may be present, but cases have been described without them. There is abscess formation with marked undermining of the scalp, and the process heals with keloid-like ridges and nodules interspersed with atrophic scars varying in size from that of a small pea to that of a dime.

Through the courtesy of Dr. Michelson [17] I have been able to compare the histologic observations in his case of acne conglobata with the disease under discussion. In acne conglobata the epidermis shows a marked hyperkeratosis, and the follicles are widely dilated and plugged with corneous masses. Folliculitis and perifolliculits are observed, but the reaction is not severe. The perifollicular infiltration is sharply limited to the region of the follicle. The suppuration seen clinically is in striking contrast to the slight purulent reaction found microscopically. In perifolliculitis capitis, however, a marked hyperkeratosis is seen in only one section, and dilatation of the follicular orifices is not prominent. Folliculitis and perifolliculitis are severe, and are characterized by purulent infiltration and destruction of the follicles with extension of the process deep into the corium. In summarizing these differences, one is impressed with the fact that they lie in the degree of reaction on the part of the tissue rather than in fundamental variations. May not the anatomic location of the two diseases determine these variations?

ETIOLOGY

The etiology of perifolliculitis capitis has not been definitely established. Frieboes [18] expressed the belief that some of the cases can be considered as chronic streptococcic infections. Hauck [7] said that the staphylococcus, and possibly the streptococcus, acted in a skin of lowered resistance. Highman [19] thought that the disease indicates a curious susceptibility to the staphylococcus. Bacteriologic investigations have yielded the staphylococcus in the majority of cases (Veiel,[6] Hauck,[7]

17. Michelson, H. E., and Allen, P. K.: Acne Conglobata, Arch. Dermat. & Syph. **23**:49 (Jan.) 1931.

18. Frieboes, W.: Zur Follikulitis et Perifollikulitis abscedens et suffodiens, Dermat. Ztschr. **45**:18, 1925.

19. Highman, W. J., in discussion on Gross: Perifolliculitis capitis abscedens et suffodiens, Arch. Dermat. & Syph. **19**:840 (May) 1929.

Mohrmann,[20] Eller,[21] Highman,[15] Howard Fox,[22] H. Hoffmann,[13] Hagiwara,[23] Ruete,[4] but the streptococcus has also been recovered (Frieboes,[18] Höft [24]). Riecke,[25] Koehler [10] and Wise and Parkhurst [1] found both streptococci and staphylococci, while Stangenberg [26] described a gram-positive diplococcus. The consistent failure to find any etiologic factor except pyogenic cocci seems to indicate that the disease represents a peculiar susceptibility to these bacteria. The recovery of the staphylococcus in pure culture and its demonstration in the perifollicular infiltrate of the earliest lesion in the case under discussion suggests that the disease in this patient represents a peculiar response to this organism.

COMMENT

The name perifolliculitis capitis abscedens et suffodiens has been criticized by Pusey,[27] Highman,[28] Schamberg [29] and others as cumbersome and unnecessary for a disease which represents nothing but multiple abscesses of the scalp. One of the most striking clinical and histologic features is the purulent undermining cellulitis of the scalp. The name "dissecting cellulitis of the scalp," as suggested by Pusey,[30] is therefore proposed for the disease.

CONCLUSIONS

1. A review of the literature indicates that this disease is in close relation to acne conglobata.

2. Histologic investigations show that the disease begins as a folliculitis followed by a severe perifolliculitis with extension of the

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20. Mohrmann, B. H. U.: Zwei Fälle von unterminierter Narbenbildung nach chronischer Eiterung (Perifolliculitis abscedens et suffodiens), Dermat. Ztschr. **51**:336, 1928.

21. Eller, J. J.: Perifolliculitis capitis abscedens et suffodiens, Arch. Dermat. & Syph. **17**:272 (Feb.) 1928.

22. Fox, Howard: An Unusual Suppurating and Cicatrizing Inflammation of the Scalp, Arch. Dermat. & Syph. **8**:277 (Aug.) 1923.

23. Hagiwara, S.: Abstract, Zentralbl. f. Haut- u. Geschlechtskr. **4**:138, 1922.

24. Höft: Case Presentation, Dermat. Ztschr. **47**:204, 1926.

25. Riecke: Case Reports, Arch. f. Dermat. u. Syph. **151**:390, 1926.

26. Stangenberg, J.: Ein Beitrag zur Perifolliculitis capitis abscedens et suffodiens, Dermat. Wchnschr. **81**:1209, 1925.

27. Pusey, W. A., in discussion on Wise, F., and Parkhurst, H. J.: A Rare Form of Suppurating and Cicatrizing Disease of the Scalp, Arch. Dermat. & Syph. **4**:740 (Dec.) 1921.

28. Highman, W. J., in discussion on Feit: Tuberculosis Cutis Verrucosa, Arch. Dermat. & Syph. **20**:125 (July) 1929.

29. Schamberg, J. F., in discussion on Strause: Perifolliculitis capitis abscedens et suffodiens, Arch. Dermat. & Syph. **10**:226 (Aug.) 1924.

30. Pusey, W. A.: Personal communication to the author.

process in the deep layers of the scalp as a purulent cellulitis. Healing results in a deep-seated fibrosis corresponding to the extent of the cellulitis.

3. A review of the literature, together with the evidence in this case, indicates that in all probability this disease represents a curious susceptibility to the pyogenic cocci.

4. It is suggested that the name perifolliculitis capitis abscedens et suffodiens be dropped, and that the disease be designated "dissecting cellulitis of the scalp."

Dr. T. Wingate Todd, professor of anatomy in the Medical School of Western Reserve University, prepared the photographs and Dr. R. A. Moore of the Institute of Pathology the photomicrographs. Dr. R. Dominguez gave his assistance in the study of the sections.

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ABSTRACT OF DISCUSSION

DR. FRED WISE, New York: In a case such as that described by Dr. Barney, the characteristic features of the condition are so manifest that differential diagnosis need only be academic. The condition might be confused with multiple furunculosis and cyst formation of the scalp, but in the latter, there is an absence of the dissecting and undermining elements, and an absence of keloid formation during the active stages of the infection, while pain is usually a prominent symptom. Moreover, in multiple furunculosis, the hair between the furuncles remains healthy and does not loosen in the follicles. In perifolliculitis nearly all of the hairs in the affected area of the scalp may be pulled out with slight traction, or may fall out in the course of the disease. Dr. Barney's is the first case of such infection, I believe, to be recorded in the Negro race. In the patient observed nine years ago by Parkhurst and myself, there were many lesions that resembled an engorged grape with translucent walls, containing a glairy, semifluid secretion; other lesions looked like thin-walled and partially collapsed sebaceous cysts; there were no comedones, and the skin was free from acne.

As Dr. Barney pointed out, there is without doubt a close relationship between this disease and acne conglobata, but I would rather consider them as two different clinical entities, in the same sense, for example, that sycosis vulgaris and pustular folliculitis of the pubes are different clinical entities.

Dr. Barney has made a comprehensive study of the pathology of the disease, and his observations are essentially the same as those previously reported. His discovery of broken down disintegrated hairs acting as foreign bodies merits particular attention. The uniformity of the clinical and histologic changes in most of the cases is a striking feature of the disease. As to the etiology, one can only surmise that one is dealing with a patient whose scalp is a soil particularly susceptible to the staphylococcus, for reasons unknown.

As to treatment, one would expect to get good results from vaccines, bacteriophages, yeast therapy, injections of milk, injections of magnesium butyrate, and so forth, but I believe that the best procedure in the present state of our knowledge will prove to be depilation with the roentgen rays.

DR. LOREN W. SHAFFER, Detroit: Two years ago I reported a case similar to that described by Dr. Barney. This was the case of a white man, aged 26, who had the granulomatous lesions typical of this condition interspersed with an

active folliculitis and with an acneiform eruption on the face and neck. The trouble lasted for three years, and all previous methods of treatment had failed. He had thick wiry hair which he kept short. In examining the granulomatous lesions carefully, I was surprised to find that they contained numerous hairs, the tips of which were flush with the surface of the lesions. They could be extracted readily; they averaged about 1 cm. in length, which was the length of his hair at that time. In other words, these hairs were entirely free in the lesion, seemingly having been loosened by the preceding folliculitis and then mechanically forced into the scalp, possibly by the pressure of a cap which he wore continuously. I decided that the free hairs were acting as foreign bodies, producing these granulomatous lesions. I attempted to extract these hairs mechanically through a number of seances, and instructed the patient to let his hair grow longer and to avoid wearing a tight-fitting cap. The condition then cleared up promptly under local measures which previously had failed. This case, with its clinical observations, I believe confirms the excellent pathologic demonstration of Dr. Barney that these cases represent foreign body tumors caused by dead hair. I am surprised, however, that his case is that of a Negro, as it is most difficult to explain how kinky hairs could enter to the depth of the lesion.

Dr. Robert E. Barney, Cleveland: I do not believe that we can determine at present the actual relationship of perifolliculitis capitis and acne conglobata. I think that it remains for future investigation to establish this relationship, for there are at present few reports in the literature. Perhaps the most characteristic observation in the microscopic sections was that of the hair. In practically every section one could find giant cells filled with this brownish, granular pigment representing disintegrated hair and fragments of hair scattered throughout the infiltrate. In serial sections, one could follow the disintegration of the hair with the associated foreign body type of reaction.

Apropos of what Dr. Shaffer said, there are two reports in the literature in which the authors described hairs in the purulent discharge from sinuses, but in no instance was there mention of disintegrated hair scattered in the infiltrates.

I was aware of the lesions mentioned by Dr. Wise resembling collapsed grapes. I kept this in mind, but in the literature I could find no similar report.

THE CONTACT OR PATCH TEST IN DERMATOLOGY

ITS USES, ADVANTAGES AND LIMITATIONS *

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AND
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In the field of immunology many formerly purely theoretical points of view have recently found experimental confirmation or rebuttal. Most of the experiments of the last few years have tended to confirm the theory that a great many of the various types of hypersensitiveness are due to the presence of cell-fixed antibodies. Without going into the detail of this consideration, it might be said that it offers an explanation for many of the otherwise inexplicable immunologic phenomena which are encountered in human pathology, including the pathologic reactions of the skin. It explains the hypersensitive reaction of certain tissues, and of those tissues only, in spite of the existence of generalized contact with the exciting substance. Of the many possible examples we need cite only the following: Pollen enters the respiratory tract of the patients, A and B. Both are hypersensitive to the pollen in question, and the pollen comes in contact with the mucosa of the same parts of the respiratory tract in both instances. But while A develops hay-fever, B has asthma. This difference can best be explained on the theory that in the first patient the reacting antibodies are fixed to the cells of the nasal mucosa and the conjunctiva, while in B they are attached to the cells of the bronchioles.

It was shown that one must also distinguish between different localizations of hypersensitive reactions in the skin, and that the clinical picture and the entire nosology of a hypersensitive skin condition is dependent to a great degree on the part of the skin in which the hypersensitiveness is localized (epidermis, superficial cutis, deep cutis, etc.). We believe that there are many different types of such hypersensitive skin reactions; clinically, one can clearly distinguish several of them today. The differences between some of them are so obvious that they need only be glanced at to be apparent. The bluish, fairly deep-seated, sharply demarcated reaction from phenolphthalein, the succulent, edematous wheal of urticaria, the blistering, weeping, erythematous eczema or dermatitis venenata, are so different in appearance that they

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have become linked in our minds only through the conception of the underlying immunologic mechanism.

The theory that in each type of reaction the antibodies have become fixed to a different part of the skin, to a different group and type of cells, and that then these cells alone react to contact with the exciting agent, helps us to understand some of the possible reasons for these differences.

Whatever the future may show concerning the theory of the cell-fixed antibodies in different parts of the skin, one fact is already established: The different types of skin eruptions due to hypersensitiveness require different methods of testing, in order to discover the substances to blame. There is no universal method which is efficacious in the testing of all hypersensitive skin conditions.

The type of eruption that concerns us in this paper is the superficial, eczematous, vesicular, papular, erythematous reaction of eczema or dermatitis. In this condition the contact or patch test should be employed, for it, and it alone, can aid in the quest of the etiologic factor and in the study of the dermatitis.

This method had its origin about thirty-five years ago. In 1895, J. Jadassohn reported that he had observed the following phenomenon: A patient received an intramuscular injection of a mercury compound and developed a generalized eczematous mercurial dermatitis. The body was entirely covered by the eruption, with the exception of a small rectangular area in which the skin remained normal. On investigation, it was found that some time previously a plaster containing mercury had been applied to this site. This phenomenon gave Jadassohn the idea that one could elicit skin reactions in the hypersensitive by the simple method of applying the substances to the surface of the skin, without scratch or injection. He found this to be true in cases of eczematous dermatitis, and introduced the patch or contact test (functionelle Hautprüfung).

The use of this test by Bloch and his school has not only led to the discovery of the cause of innumerable otherwise obscure cases of eczema, but has disclosed some of the most important and fundamental facts concerning eczema. In addition to this, Bloch's experiments with this method have yielded many basic discoveries concerning the general processes of sensitization and desensitization. We need only to recall his experimental primrose sensitizations to emphasize this fact.

METHOD

The technic of the test is extremely simple. It consists in the application to the uninjured surface of the skin of all the substances that come in question as causes of the disease in the case being investigated. This is done by means of a small piece of linen or blotting paper which is soaked in the solution or covered

with the ointment, powder or other material in question. This small patch is applied to a normal area of the skin of the patient and covered with a larger piece of gutta percha, oiled silk or other impermeable tissue, and both are held in place by a still larger strip of adhesive plaster. By using the patient's back, for instance, thirty to forty such tests can be made at once, in perpendicular rows, one beside the other, each row of patches and their impermeable covering being held in place by one long strip of adhesive tape. Whenever many tests are made at the same time, the sites should be marked by numbers on the patient's skin, either with silver nitrate, or better, with indelible pencil. This is done to assure the accuracy of future readings. The patches are allowed to remain in place twenty-four hours (unless the irritation becomes too great to be supported); we recently observed a reaction in a patient so extremely hypersensitive that the patch (impregnated with a substance harmless to normal skins) had to be removed within fifteen minutes, having already caused intolerable burning and the formation of a large blister on the entire area of contact.

On removal of the patch, the reactions of the sites are noted. The sites must be observed after twenty-four, forty-eight and seventy-two hours and then at intervals during the next two weeks; certain substances (trichophytin, for instance) seem particularly disposed to cause delayed reactions.

The types of reactions and the readings will be discussed later.

One thing is extremely important in carrying out these tests, namely, the certitude that a reaction has not been caused by a substance which is a primary irritant, but is actually due to the hypersensitiveness of the patient's skin. In order to be sure of this, all new substances (that is, substances for which previous investigations have not established the fact that they are innocuous to normal skins in the concentrations employed) must be tested in different dilutions on large series of normal persons in order to ascertain the concentrations which are not primary irritants, that is, not harmful to normal skins. Only these normally harmless concentrations may be used in tests for skin hypersensitiveness. In this manner serious mistakes can be avoided. This is illustrated, for instance, in testing with soaps by means of the patch test. Almost any soap, if applied under the patch test for twenty-four hours, will cause an erythematous reaction on the skin of normal persons. Therefore such a reaction does not prove that a person being tested is hypersensitive to a particular soap. For testing, an emulsion of the soap must be made which is sufficiently dilute not to injure normal skins.

One of the first essentials in the practical application of the test is the correct selection of the cases in which results may be hoped for. So far it has proved of practical value only in more or less acute cases of eczematous dermatitis—those which one is prone to call dermatitis venenata. The cases of chronic lichenified eczema, of circumscript or disseminated neurodermitis, of seborrheic dermatitis, of urticarial eruption, of angioneurotic edema and of drug eruptions not of eczematous character have thus far proved themselves generally refractory to this

type of testing. The patch test has its principal use in acute occupational dermatitis, in dermatitis venenata, in plant dermatitis, in dermatitis medicamentosa and in drug eruptions of eczematous type, such as those caused by arsphenamine or mercury dermatitis, in other words, in all the most superficial, acute or subacute eczematous reactions, whether from endogenous or exogenous causes, whether due to external contact or to internal dissemination of the substances.

In the future other uses may be found for the patch test. It is necessary to continue trying it with all manner of substances and in all kinds of skin and other conditions when this is being done for purposes of research. But in practice, a great deal of time will be saved both the physician and the patient if only the conditions we have mentioned as suitable are tested with the patch.

READINGS AND EVALUATIONS

The next point to consider is that of the readings and the evaluations of the reactions. Whenever an irritation of eczematous character appears at the site of the application of the patch, provided a substance has been used which is not a primary irritant, hypersensitiveness of the skin to this substance is demonstrated. However, this does not necessarily mean that one has actually found the substance which has caused the dermatitis being investigated. Several reservations are necessary, and certain conditions must be fulfilled before one can be reasonably certain that one has found the substance to blame.

First, there must be a clear history of opportunity for contact with the substance. (This contact may have existed for years without causing skin irritation; the hypersensitiveness may begin suddenly and without discoverable cause.) A positive reaction to a substance with which the patient cannot have come in contact is obviously of no value.

The second point to be considered, in estimating the significance of a positive test, is that the reaction must take the form of the dermatitis being investigated; in other words, the reaction must be an eczema of some kind. Obviously, the appearance of a wheal, folliculitis, a pustule, tuberculosis, syphilis or any other lesion of the skin on the patch area cannot be regarded as of significance in considering the etiologic rôle of the substance.

Another point to be borne in mind in drawing conclusions from positive patch tests is that there are a great many polyvalent sensitizations; that is, sensitization occurring to one substance often brings with it sensitization to other related or unrelated substances. It is as though the first sensitization breaks the path or marks the route for sensitizations to follow. The mechanism for sensitizations in general is put into motion. This has been very well illustrated by Bloch's work. It is therefore possible that the patch test may disclose one of the sub-

stances to which the patient is sensitive, but that the other substances to which he is sensitive may have been overlooked, and that it may cause the dermatitis to continue. It is therefore necessary to state the following criterion: The elimination of the substance or substances which give positive tests, or desensitizing treatment with these substances, must cure the skin condition.

The aforementioned points briefly outline some of the considerations physicians must bear in mind in judging positive reactions. There are also certain points to be considered in estimating the importance of negative reactions. For several reasons, a negative reaction does not always mean that the substance tested was not the cause of the eruption. Just as sensitizations suddenly appear, spontaneous desensitizations

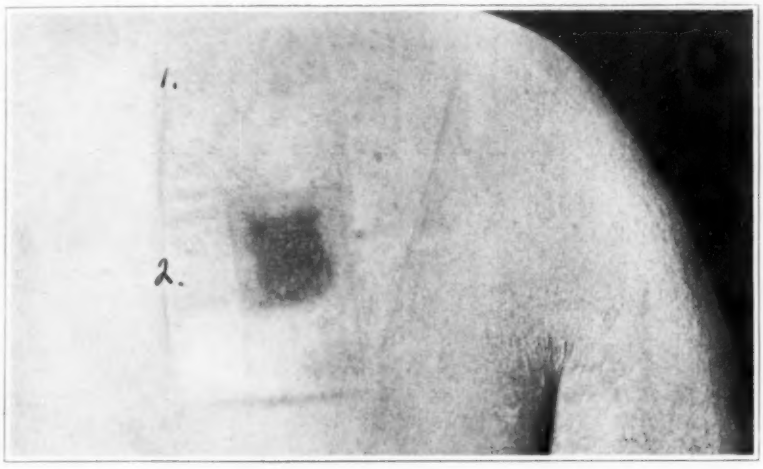

Fig. 1.—Diffuse erythema and vesicles at site of contact tests.

occur. In fact, most hypersensitive processes seem to run in phases of extreme hypersensitiveness, lesser hypersensitiveness and normal nonsensitive reactions. The negative reaction to a test may be due to the fact that it is applied during a period in which the skin is no longer hypersensitive. This is particularly true because desensitization periods often follow, or are caused by, the acute eruption which causes the patient to seek treatment.

Furthermore, one must remember that there are phenomena of local hypersensitiveness and immunity. Patients may be sensitive to the substance in question in the skin areas in which the dermatitis appears and not sensitive in the areas tested. For instance, a dermatitis of the eyelids, due to eyedrops, mascara, etcetera, may or may not indicate a generalized skin hypersensitiveness. A patch test applied to the arm

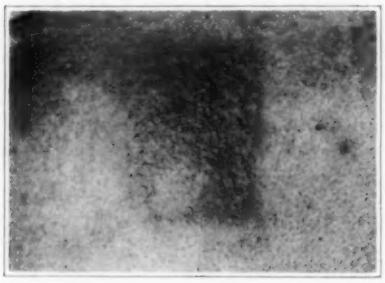

Fig. 2.—Follicular vesicles, twenty-four hours after application of patch test.

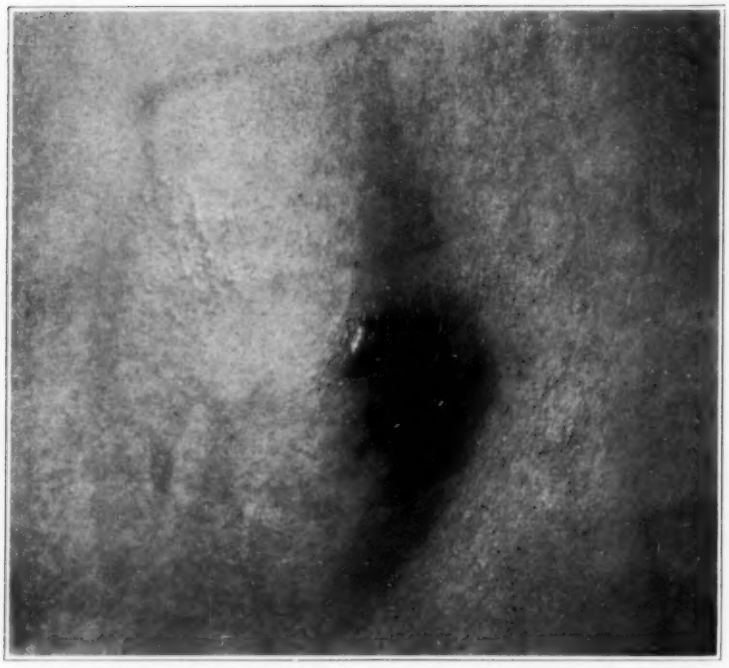

Fig. 3.—Bullous reaction at site of patch test; photograph taken forty-eight hours after application.

or other site may be negative, provided the sensitization has remained a local one; only the eyelids are sensitized.

It is also essential to remember that all the manifold conditions which actually caused a dermatitis to appear cannot be exactly reproduced, and that for this reason the results may be negative. In occupational dermatitis, for instance, there is often a constant repetition of contact with small quantities of the existing substance, and this repeated contact, over long periods of time, may be essential for the production of certain cases of dermatitides. Then again there may be additional pre-

Fig. 4.—Reaction on forearm, demonstrating type of follicular and vesicular reaction.

disposing factors present in occupational or other types of eczema, for instance, skin maceration, heat, friction, small skin traumas, etc.

In spite of these points, which must be borne in mind in the use of the patch test, we cannot state too emphatically that it is at present the only indicated method for the investigation of dermatitis of eczematous type. The scratch and intradermal methods have their place in cases of urticaria, asthma, hay-fever and of other conditions, but in dermatitis they must be superseded by the patch test.

The photographs shown demonstrate the materials, the manner of testing and the types of reactions observed.

REPORT OF CASES

CASE 1.[1]—*Ragweed Dermatitis.* The patient presented a vesicular, generalized dermatitis. After scratch and intradermal tests proved negative, the patient gave a markedly positive reaction to the patch test with ragweed allergen.

In this case, desensitization through intradermal injections of the allergen seemed successful. After a series of injections, the patient was discharged as cured.

CASE 2.[2]—*Procaine Dermatitis.* A young woman presented marked edema, with redness and vesiculation of both upper and lower eyelids. Conjunctivitis was present. The eruption was of four months' duration. All therapy proved unsuccessful. Through diets, irrigations, etc., the patient lost weight and was generally affected. All skin tests were negative, until after many days of questioning, the patient mentioned eyedrops which she had used for years, and which she had been assured were harmless.

Fig. 5.—Site twenty-six days after strong reaction. Illustrating the eczematous character of the course of dermatitis. All of the characteristics of chronic lichenified eczema are to be noted.

The patch test on the skin of the patient's back with the eyedrops was strongly positive after forty-eight hours. The drops were found to contain procaine, 1 per cent, and tests with this also gave very strong reactions. Figure 3 depicts the strong bullous reaction to the patch test impregnated with 1 per cent solution of procaine hydrochloride.

CASES 3, 4 and 5.—At intervals of several weeks, three men employed in the same printing establishment were referred to us. All three suffered from eczematous dermatitis of the hands, arms and forearms. They were all given patch tests, impregnated with the various materials employed in their work.

1. This case was reported in full in the *Journal of the American Medical Association.* (Sulzberger, Marion B., and Wise, Fred: Ragweed Dermatitis: With Sensitization and Desensitization Phenomena, J. A. M. A. **94**:93 (Jan. 11) 1930.

2. This case will be reported in full by Dr. Bart M. James, Newark, N. J.

The first patient reacted strongly positive only to a "reducing fluid" (made from spruce wood), the second reacted only to kerosene, and the third only to an ink containing para-red. By avoiding contact with the substance which gave positive tests, all three could continue their work, and the dermatitis improved steadily. One patient was discharged cured, and the other two had only slight remnants of eczema when last seen.

We could cite many more cases of this nature found positive to a great variety of different substances, but the foregoing suffice as illustrations.

In conclusion a brief statistical summary of the cases investigated with the patch method both at the clinic of the New York Post-Graduate Hospital and in our practice is given. In judging these statistics, it is necessary to bear in mind that the cases were selected with care, and only those patients were tested who seemed especially promising for investigation by the patch test.

Statistical Summary of Cases Tested by the Patch Method for Sensitiveness of the Skin

	Number of Cases of Dermatitis Venenata or Eczema Tested	Number of Positive Patch Tests with Substances Probably the Exciting Factor	Per Cent
Post-Graduate Hospital, New York, skin department. Director: Dr. George M. MacKee; service of Dr. Fred Wise	49	29	59
Practice of Wise and Sulzberger	44	22	50

200 West Fifty-Ninth Street.

ABSTRACT OF DISCUSSION

Dr. George M. MacKee, New York: To illustrate the practical use of the contact test, I will start the discussion by relating a spectacular example of its use. The case in question was that of a man who had a very recalcitrant type of dermatomycosis of the hands and feet of two years' duration, during which time there were exacerbations and remissions. When I first saw him, the eruption consisted of an exudative eczema of severe type, which improved under the influence of wet dressings, leaving exfoliation, redness and dryness. I advised the use of an ointment, but the patient informed me that every time an ointment had been used he had been made distinctly worse, which I did not believe. He consented to use the ointment, so I prescribed a boric acid ointment, which I did not believe could possibly make a dry eczema worse. He applied it before retiring, but had to get up two or three hours later and remove it because of a severe burning sensation. The next morning there was again an exudative eczema, which he thought was due to the ointment, but I did not think so. The exudation subsided in a week or two; a zinc oxide ointment was then tried, with the same result. I used various ointments, always containing soothing agents, but with the same base and always with the same result. Then we started the patch tests, testing him for everything in the ointment—boric acid, petrolatum,

wool fat, etc., and obtained a severe reaction from the wool fat. The contact test was positive, whereas the intradermal test was negative. When the eruption was quiet again, we applied ointments with a base of benzoated lard, after testing for this substance with negative results. The patient made an uneventful recovery, and there has been no recurrence. Several similar cases have been encountered.

This illustrates the practical usefulness of this method and also some of the points brought out by Sulzberger and Wise—that in the treatment of dermatitis venenata, one must use the patch test rather than the intradermal test in order to obtain positive results. These tests illustrate a point to which Highman called attention many years ago, namely, that there are two factors operative in the production of eczema—an internal factor called allergy, atopy, sensitization, idiosyncrasy, etc., and an outside precipitating factor. These have been worked out in the laboratory by many workers, including Bloch and Jadassohn.

The method of approach should be emphasized when searching for the cause of a case of dermatitis venenata. It is a waste of time to start the patch tests before anything else is done. That would mean an unnecessary number of tests. There are, as you know, an infinitesimal number of substances, not to speak of irritating substances, that can produce a specific reaction on the skin. The method of approach of Dr. Sulzberger, who has charge of this work at our clinic, is to interrogate the patient carefully. It is a saving of time to spend ten or more minutes in questioning, and this is particularly true in the industrial cases. In the case of the housewife, for instance, one should ascertain all the substances with which she is in more or less daily contact, making a list on paper. Then the patch tests are made. In this way we get 25 or 30 per cent positive results in dermatitis venenata.

Dr. Sulzberger mentioned some of the reasons for negative results. Of course, the test is sometimes negative even though a substance that is causing the dermatitis is used. This is because we have variations in sensitivity, so that a patient may react at one time and not at another, or he may react in one part of the body and not in another. Furthermore, in eczema of the dermatitis venenata type, the surface of the skin will react while the deeper layers will not. That is the reason for the patch test. When dealing with a substance to which the patient is sensitized, but which may also be irritating to normal skin, it is necessary to employ dilutions and controls. Zinc oxide plaster will effect an eruption on many persons. This is not confusing to those who have had experience, because the eruption surrounds the tested area which is covered with oiled silk.

Dr. Michael H. Ebert, Chicago: I should like to inquire whether the essayists have found the contact or patch test of value in what we usually designate as cases of chronic eczema. I refer to patients who have been described as belonging to the atopic type, who are the bane of the existence of the dermatologists, who go on year after year with remissions and exacerbations of dermatitis. Have the contact tests been of advantage in solving their problem? I have used the contact test with many substances in these cases, with negative results. This has been surprising, for it is taught that these persons have a hypersensitive skin, yet on using the test one finds them no more sensitive than the normal person. I think that this is interesting from the theoretical point of view, and I should like further explanation on this point.

Dr. Walter J. Highman, New York: Dr. Sulzberger's comprehensive and clear exposition of this problem is gratifying to the person whom Dr. MacKee mentioned as perhaps the original storm center of the linguistic controversy as

to whether eczema, allergic dermatitis, et al. were the same thing. I maintained that there was no essential difference between the alleged conditions. We do not hear about this controversy since the concept has at last been clearly established. It was thirty-five years ago that Jadassohn, and I think, incidentally, that it was in this connection that he thought of the patch test, expressed his belief that the two diseases were one and the same thing. Now we do not concern ourselves with hypothetical differences and with definitions, but with an attempt to understand the significance of the condition. We know that appellation is an indifferent matter since we grasp the fundamental fact that two phases of one phenomenon are necessary to elicit the eczema syndrome, as Dr. Sulzberger emphasized, namely, predisposition and a precipitant. It is easier to isolate the precipitant than to understand what predisposition is.

Dr. Sulzberger mentioned the various localizations of the predisposition, and this aids our understanding of the question in a manner somewhat more subtle than anything we have had heretofore. I think that until we understand more about osmosis and dialysis in the cells themselves, we will not understand what predisposition is, nor what the underlying metabolic changes are; this knowledge is beyond us today. We can only hope that in the future some Einstein of dermatology will begin to clear up the question for us. I think the problem is as subtle as that. I was glad Dr. Sulzberger's statements about the patch test were so conservative. After all, it is a question of removing either a substance in the environment of the patient or the patient from that environment. It is easier to remove the substance than the patient from the environment.

All in all, I think this was a noteworthy presentation of the subject, and with the paper to follow, will do much toward clarifying the problem in America at least. I believe Markley was the first in this country to apply the patch test with reference to guinea-pig dermatitis.

If I may mention something about polyvalent sensitization, I should like to tell you about a patient of mine with dermatitis venenata whom I tested to everything in the garden about her house, and gave patch tests with the various flowers and plants. They were all negative. In other days we would have called the eruption ivy poisoning and have let it go at that. I advised wet dressing with magnesium sulphate, used for fifteen minutes every hour, with talcum powder applied during the intervals. She improved for a few days and then was worse. I thought she had been exposed to something else. We gave her a soothing ointment, and she became worse. I told her to go back to the wet dressings, but she could not stand them. She was put on sodium bicarbonate, of her own volition, and within six hours was perfectly comfortable for the first time in weeks. That patient was sensitive to magnesium sulphate.

Dr. Joseph J. Eller, New York: I wish to congratulate Dr. Sulzberger on stimulating interest in this particular method of testing dermatologic conditions that are suspected of being due to contact with some specific irritant. No doubt a great many etiologic factors of this kind can be found by this method, probably more than with any other. The method is practical, and if the dermatologist takes a thorough history, there is no reason why he cannot check up on the etiology by this fairly simple test. A patient may come to the office with a history of dermatitis due to using a certain soap. It is easy to take some of the soap and test it. It is interesting that certain layers of the skin may be sensitive to certain agents and that in many tests with various chemicals they will give a positive scratch test and a negative intradermal test. This test will certainly be of great value in checking tests to which patients have given negative reactions.

Dr. Bedford Shelmire, Dallas, Texas: The troublesome reaction caused by the adhesive plaster in a sensitive person can be easily eliminated by covering the substance in contact with the skin with a strip of dental dam twice the size of the tested patch. The adhesive plaster in direct contact with the skin is then separated far enough from the tested area to cause no confusion in reading the results of the test.

I should like to know if the essayists have been able to desensitize a patient by the repeated application of the substance to which he is sensitive. I have apparently benefited one patient sensitive to crude oil by this type of therapy. Also, have these gentlemen been able to desensitize a given person by the injection method? I have seen but one beneficial result from this method; a chronic dermatitis of the face and hands in a person sensitive to dog hair was at least temporarily cured by this form of desensitization.

Dr. Karl G. Zwick, Cincinnati: The interpretation of Jadassohn's skin test at one time was comparatively simple. But this is no longer the case, since it has been taught that if the result is negative, one has to distinguish between phases of positive anergy, negative anergy and exhaustive anergy, each of these three states of absent reactivity being explained in various ways by different authorities. And when the skin test is positive, one may be in doubt whether the reaction is the manifestation of a specific or of a group allergy.

Dr. Sulzberger's discussion is a distinct contribution in this theoretical aspect of Jadassohn's test, which in dermatologic practice renders valuable assistance to the experienced observer.

Dr. Joseph R. Grindon, St. Louis: One of the materials used in doing this patch test is the adhesive plaster, and I presume all physicians are familiar with the reactions which so often result from the use of such plaster. I have been informed that zinc oxide plaster contains orris root. If this is true it would explain a great deal; I wonder whether those present can throw any light on this point.

Dr. Marion B. Sulzberger, New York: To answer in full all that has been said would take much more time than I am allowed.

Dr. MacKee, in speaking of the interesting cases due to wool fat, brought out the point that when testing for composite substances we must go further than to test the substance alone; we must test each ingredient. Dr. MacKee told me about his case, and in Dr. Wise's office we found three other patients sensitive to wool fat. An interesting point was that one of them gave a positive reaction to lamb and sheep wool and a slightly positive reaction to goat hair; we could not tell whether it was the fat substance or the hair that was the responsible factor.

The cases must be carefully selected, if one wishes to get a high number of positive reactions. If one wishes to test only those in which it will pay as far as the patient is concerned, I should say that one should test only the acute cases. It is logical to assume that with the patch, one is simulating the mode of causation of the acute reactions. On the other hand, cases of chronic eczema may be due to chronic applications of irritating substances which do not give acute reactions. We think that one cannot expect to see a reaction from one application of the test in these cases. We do not know what would happen if we applied the test every day for several months, but we might be able thus to reproduce these chronic dermatoses.

As Dr. MacKee brought out, the impermeable cover serves several purposes: first, to keep in the moisture and, second, to separate the occasional adhesive

plaster dermatitis from the central dermatitis due to the presence of the test substance. The different components of the zinc oxide plaster which may cause skin irritations have been tested. In some cases the trouble may be due to orris, but in most of them it is due to the gummy substance used in the preparation of the adhesive. Dr. Shelmire seems to have been more fortunate than the rest of us in regard to desensitization, for the production of desensitization has been rare, and if he can arrive at even two proved desensitizations, that is a large percentage. It must always be borne in mind that spontaneous sensitization and desensitization can run in waves, and this may have been the case in some of the instances which seem to be successful desensitizations due to specific or non-specific therapeutic measures.

In closing we wish to recommend the use of the patch test in industrial and occupational cases; we think that its employment has hitherto been too limited, and that through education to its use the medical profession can bring a contribution of decided economic value to industry.

I cannot discuss here whether neurodermite should be separated from eczema, but I think at least some cases should. In my experience practically all of the patch tests have been negative in typical neurodermite. We have tried a great variety of substances, including products of bacteria and fungi. I have the impression that in patients with neurodermititis we had even more negative reactions than in normal persons. The skin (epidermis) of these persons seems to be hyposensitive and to react less to this type of testing.

If the cases are well selected, I think we can get about 30 per cent positive reactions. In Dr. Wise's office we have had about this percentage, all the criteria I mentioned being used. In Dr. MacKee's Clinic at the Post-Graduate Hospital we have also had about 30 per cent positive reactions.

As Dr. Highman pointed out, there are two essentials: predisposition and external precipitant. This shows that in testing, only substances which are not primary irritants should be used. If caustic acid or alkali or something of that nature is responsible for a dermatitis, this is because these substances are primary irritants and do not require the presence of the predisposing hypersensitiveness. Therefore they cause dermatitis in one and all, and there is no necessity for testing.

I was interested in Dr. Shelmire's discussion. As far as the adhesive plaster is concerned, we have had so little trouble from this that I think perhaps we use a different brand.

Biography

HENRI LELOIR, M.D.*

B. BARKER BEESON, M.D.
CHICAGO

Destined for a short but brilliant career, Henri Leloir was born in 1855. He studied medicine in the French capital and was afterward an interne des Hôpitaux de Paris. His thesis showed an early inclination toward cutaneous pathology since it bore the title "A Contribution to the Study of the Formation of Pustules and Vesicles on the Skin and Mucous Membranes" (1880). In this thesis, Leloir described a change in certain of the cells of the malphigian layer which he termed "altération cavitaire." It was, he believed, an important factor in vesicle formation. After his graduation, Leloir was chief of clinic to Fournier. He had also spent much time with Cornil and Vulpian, who were among his favorite teachers. In 1886, Leloir was made professor of dermatology at the University of Lille with a service in the Hospital of the Holy Savior. Later, he became a corresponding member of the Academy of Medicine and a Chevalier of the Legion of Honor.

Cutaneous histopathology, leprosy, tuberculosis and the dermatoneuroses were his favorite subjects. A large number of his articles, particularly those on histopathology, were written in collaboration with Émile Vidal. I have already mentioned the treatise which they had begun but did not complete owing to their untimely deaths.[1] Leloir was the French representative on the editorial board of the Atlas of Rare Skin Diseases. In 1878, he studied leprosy in northern Italy. In 1884, the French government sent him to Norway on a similar mission. While there, he spent ten hours daily among the lepers. Later he sought for lepers in the Midi of France. He published a treatise on leprosy in 1886, which was based on a direct study of 900 cases. This work was given the warmest praise, notably by Unna. Leloir also wrote an extensive monograph on scrofulotuberculosis of the skin and adjacent mucous membranes.

A list of the disorders to whose histopathology he contributed would be too long for enumeration here. He also published a monograph on

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* The following articles have been written on the life of Leloir: Besnier, Ernest: Henri Leloir (1855-1896), Ann. de derm. et de syph. **7**:777, 1896. Necrologie, M. le Professeur Leloir (de Lille), Progrès méd. **3**:412, 1896.

1. Beeson, B. Barker: Emile Vidal, Arch. Dermat. & Syph. **22**:115 (July) 1930.

the dermatoneuroses. His other publications include the following: the erythematoid type of lupus vulgaris, a new form of kerion of the skin, suppurative lesions of the skin following influenza, the alteration of the cutaneous nerves in a case of vitiligo, destruction of the chancre as a means of aborting syphilis, infantile cerebral syphilis, atypical varieties of lupus vulgaris, an indurated chancre between the second and third toes of the right foot, lingual lupus vulgaris, new researches on the relations between lupus vulgaris and tuberculosis, acne-like lesions in tar workers, a contribution to the study of the purpuras, symptomatology of hemiplegia of syphilitic origin, attempts to inoculate leprosy into animals, the organization of the teaching of dermatology, treatment of syphilis by the subcutaneous injection of mercurial preparations, researches on the inoculation of lupus, subungual exostosis, general preventive treatment of syphilis, etc.

Leloir did not fully regain his health after being in a railroad wreck several years before his death. Returning from a vacation in Tunis, he had gotten as far as Paris when he became violently ill. Symptoms of pneumonia soon appeared, and despite the devoted care of his friend, Déjerine, he passed away on June 18, 1896, the fourth day of his illness.

In 1886, Max Joseph had referred to him as one of the outstanding dermatologists of France. No higher praise could be accorded to him than that which Ernest Besnier included in a brief sketch of his career. It is as follows:

> Regardless of what may occur in the domain of dermatology, the memory of such a worker cannot be effaced and the name of Henri Leloir will be inscribed among the first of those who have made illustrious the end of this century. For French dermatology this premature death is a cruel blow. For dermatological science it is an irreparable loss.

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Abstracts from Current Literature

EDITED BY HERBERT RATTNER

AN EXPLANATION OF THE MECHANISM OF THE WASSERMANN AND PRECIPITATION TESTS FOR SYPHILIS. H. EAGLE, Bull. Johns Hopkins Hosp. **47**:292 (Nov.) 1930.

An explanation of the mechanism of the complement fixation and precipitation tests used in the diagnosis of syphilis, based on the underlying physicochemical reactions involved, is given. Eagle concludes that the basic mechanism of these reactions is similar, and that the substances in syphilitic serum-producing flocculation (Kahn, Sachs, Georgi and others) are identical with those concerned with complement fixation (Bordet-Wassermann).

UROSELECTAN: REACTIONS ACCOMPANYING ITS PRACTICAL APPLICATION. G. W. HARTMAN, California & West. Med. **33**:867 (Dec.) 1930.

Two of Hartman's patients complained of intense burning in the region of the vagina following the injection of an iodopyridine (uroselectan). In another patient a giant urticaria, edema of the bronchi, throat and eyelids developed shortly after the injection. An injection of atropine and epinephrine caused the urticaria to subside quickly, but the edema of the face remained for two hours. Uroselectan is a pyridine derivative containing 42 per cent of organically combined iodine.

N. P. ANDERSON, Los Angeles.

RADIUM TREATMENT OF CANCER OF THE TONGUE. STANFORD CADE.

RADIUM AND SURGERY IN CANCER OF THE TONGUE. DOUGLAS QUICK.

THE PRINCIPLES OF RADIUM TREATMENT OF BUCCAL CARCINOMA. G. E. BIRKETT, Canad. M. A. J. **23**:771, 774, 780 (Dec.) 1930.

The three writers agreed that radium was the method of choice in treating carcinoma in the mouth. For the primary growth, Cade and Birkett preferred radium needles, and Quick favored radon seeds. The first two men claimed it was difficult with seeds to obtain a uniform intensity of radiation, not only because the intensity of the radiation rapidly diminished within a period of four days, but also because the small seeds could not be so accurately placed as the larger needles. For the treatment of metastases to the neck, that were operable, they all favored surgical excision and stressed the importance of very radical removal, for an incomplete dissection was worse than useless. In the case of large inoperable metastases, the glands should be actively treated by radium needles in large doses, and the treatment should be carried out by open operation. For early cases with no palpable metastases, there was difference of opinion. Birkett advocated a waiting policy with frequent observations of the patient. Cade and Quick believed that the neck should never go untreated. Cade advocated needling the neck by the closed method or external treatment by means of a radium collar. Quick employed heavily filtered high voltage x-rays. He also recommended as a preliminary to irradiation of the primary tumor, external irradiation of the neck, including the site of the primary growth for two weeks. Their results clearly indicated the superiority of radium treatment over treatment by surgery alone, for there was no mutilation and no impairment of function.

THE PROGNOSIS FOR A SEROLOGICAL CURE IN SYPHILIS. EDWARD A. MORGAN, Canad. M. A. J. **23**:811 (Dec.) 1930.

From a study of 270 cases, Morgan concludes that one's ability to obtain a negative Wassermann reaction of the blood in congenital syphilis depends primarily on the stage of disease in which treatment is commenced. In the early stage 80 per cent can be cured; in the latent, 64 per cent, and in the late stage 49 per cent. It requires about eleven months of treatment for the early stage, and twenty-eight months for the later stages. Morgan uses as a routine measure arsphenamine intravenously once a week for six weeks, and mercury by inunction, by mouth, or by both methods for a second six weeks. If the Wassermann reaction of the blood is positive, the course is repeated again and again until a negative test is obtained. The results from treatment with bismuth in a small series of cases were not favorable.

SUBCUTANEOUS NODULES IN RHEUMATOID (CHRONIC INFECTIOUS) ARTHRITIS. M. H. DAWSON and R. H. BOOTS, J. A. M. A. **95**:1894 (Dec. 20) 1930.

Subcutaneous nodules were found in 40 of 200 patients (20 per cent) with rheumatoid arthritis. Three of these patients had suffered previously with rheumatic fever. Four others showed evidence of rheumatic cardiac involvement. The nodules are described in detail both clinically and histologically, with illustrative photographs and photomicrographs.

URTICARIA DUE TO BEDBUG BITES. T. PRESTON CHURCHILL, J. A. M. A. **95**:1975 (Dec. 27) 1930.

Churchill reports the case of a man who developed an acute generalized urticaria from bedbug bites.

TRAUMA AND DEMENTIA PARALYTICA. JOSEPH V. KLAUDER and HARRY C. SOLOMON, J. A. M. A. **96**:1 (Jan. 3) 1931.

The authors begin their paper with a consideration of the etiology of dementia paralytica; the onset and evolution of early paresis, and the rôle of trauma in determining the localization of syphilitic lesions both in man, and experimentally. They analyze the statistics regarding the relation of trauma to paresis, its rôle as a causative factor, the time elapsing between the injury and the onset of symptoms and the medicolegal status of the subject. They conclude from a study of the literature that there is a rather general judicial acceptance of the etiologic rôle of trauma in the causation of dementia paralytica. Each case is a distinct problem to be considered on its own merits, and the physician must try to evaluate (1) the effect of trauma on the intracranial contents, (2) the meaning of symptoms during the intercalary period and (3) the probable modification of the patient's usefulness and longevity.

TREATMENT OF DEMENTIA PARALYTICA WITH HYPERPYREXIA PRODUCED BY DIATHERMY. CLARENCE A. NEYMANN and S. L. OSBORNE, J. A. M. A. **96**:7 (Jan. 3) 1931.

Twenty-five patients with dementia paralytica of all types were treated by means of fever therapy. The hyperpyrexia was produced by a diathermy apparatus. Sixty-six per cent had clinical remission and 8 per cent were markedly improved. The improvement persisted for varying periods. The five patients who did not improve were totally deteriorated when treatment was begun. The serologic changes did not correspond to the amount of clinical improvement. There was no harm from the treatment to any of the patients, and the two deaths that occurred could not be ascribed to the treatment. The apparatus is described, the technic and certain physiologic phenomena associated with hyperpyrexia produced

by diathermy are also described. In the discussion of the paper, all speakers agreed that the method was a distinct contribution, and several workers tell of their experiences with other forms of fever therapy. The consensus was that the general principle of fever therapy in dementia paralytica needed no defense; it is simply a question of the mechanisms by which the results are produced. There was difference of opinion as to whether or not the fever itself produced results.

RATTNER, Chicago.

CASE OF XANTHOMA MULTIPLEX ASSOCIATED WITH HYPOTHYROIDISM. J. F. CHRISTIE, A. LYALL and T. E. ANDERSON, Brit. J. Dermat. **42**:427 (Oct.) 1930.

A case of nondiabetic xanthoma with hypercholesterolemia is described in a married woman, aged 44, who had been subject to bilious attacks every few months for the previous twenty years, with associated colicky pains in the region of the gallbladder. She presented multiple xanthomatous deposits on the palms and soles, and on the extensor aspects of the knees and elbows. One deposit was present at the entrance to the left nostril. The blood plasma was milky, looked lipemic and contained 426 mg. of cholesterol per hundred cubic centimeters. Her basal metabolic rate was minus 27 per cent. There was no improvement in the lesions or the lipemia on a diet low in fat. Thyroid extract was given up to a maximum dose of 12 grains (0.78 Gm.) daily and resulted in a fall in the plasma cholesterol, increase in basal metabolism and decrease in weight. The general condition of the patient improved, and when seen about six months later there was definite clinical improvement in the condition of the skin and the blood cholesterol had fallen to 228 mg. per hundred cubic centimeters. A brief discussion of xanthoma multiplex under three main groups, diabetic, potentially diabetic and nondiabetic, is presented. Three photographs illustrating the clinical picture are presented.

A PECULIAR PAPULAR ERUPTION OF THE HARD PALATE. H. ORR, Brit. J. Dermat. **42**:436 (Oct.) 1930.

Orr describes a peculiar eruption of the hard palate which he has seen in seven men, all over 40 years of age with one exception (aged 30 years). They were heavy smokers and two had old syphilitic infections. The lesions occupied the middle third of the hard palate and consisted of whitish papules varying in size from a pinhead to one-twelfth inch in diameter. The edges are sharply defined and precipitous, the surface flat. In the center of each lesion is a minute red spot which, under a lens, appears to be the patulous orifice of the duct of a palatine gland. Two or even three of these red spots are seen in the larger lesions. The duration of the disease varies, having been as long as four years in one case. Beyond a feeling of roughness to the tongue, symptoms are usually absent, but in two cases slight soreness was complained of. Clinically and histologically, the lesions suggest flat warts. The only measure resulting in cure has been the cessation of smoking. In two cases in which smoking was stopped, the lesions completely disappeared in four months; the remaining five cases have not improved. A clinical photograph, a histologic description of the lesions and a photomicrograph of a section of one of the papules accompany the article.

A CASE OF MULTIPLE HORNY CYSTS OF THE SWEAT-DUCTS. J. H. TWISTON DAVIES, Brit. J. Dermat. **42**:437 (Oct.) 1930.

A case of multiple horny cysts of the sweat ducts is described in a widow, aged 70. She suffered from itching of the upper part of the trunk and arms for at least five years; three months before she was seen numerous pimples appeared, and the itching became severe enough to interfere with her sleep. The eruption affected, in the order of intensity, the upper part of the back and chest, the neck, groins, axillary folds and upper extremities. It consisted of a diffuse

pigmentation varying in depth, and though not sharply defined, was definitely absent from certain parts, viz., the anterior surface of the breasts and lower extremities. The palms were free from cysts, although the patient remembered having some there. Over the pigmented areas were scattered numerous conical papules averaging from 2 to 3 mm. in diameter, with none more than 4 mm. The contents of the papule, a single white seedlike body, shone through the thinned epidermis covering it. When it was pricked with a needle, a yellowish-white, smooth, spherical body could be expressed, having a slight depression at one pole; it was tough and elastic in consistency, and peeled like a miniature onion. The syndrome consists of pigmentation, pruritus and multiple superficial horny cysts. A detailed histologic description with two illustrative drawings and a photograph of the clinical condition is presented. The itching was greatly relieved by daily radiant heat baths followed by application of the high frequency current, although the appearance of the eruption was unaltered.

THE TUBERCULIN REACTION IN LEPROSY. K. L. EVANS, Brit. J. Dermat. **42**:443 (Oct.) 1930.

Of the 106 occupants of the Jamaica Leper's Asylum, in Kingston, B. W. I., 90 were tested with the tuberculin intradermal injection test. Forty-one anesthetic, 46 nodular and 3 mixed leprosy cases were tested, the ages of the patients ranging from 12 to 70 years. Seventeen of them were under 21, and none had been an inmate for less than six months. The results of the observations are presented in three tables and are summed up in table 3, which is a comparison of the reactions of lepers and normal adults, shown in tables 1 and 2, as follows:

Lepers, Per Cent	Normal Adults, Per Cent	Reaction
12	13	Negative to all dilutions
49	61	Positive to 1/10,000 dilution
28	19	Positive to 1/1,000 dilution
9	7	Positive to 1/100 dilution
2	..	Necrotic spot to 1/10,000 dilution

Evans states that these figures must lead to the conclusion that the tuberculin reaction is entirely valueless in the diagnosis of leprosy. The possibility that antileprotic treatment may have an effect on the tuberculin reaction is mentioned by the author, although he states that no evidence has ever been presented to indicate that such treatment does affect the reaction.

HODGKIN'S DISEASE WITH DERMAL AND SUBDERMAL NODULES AND PURPURA. R. T. BRAIN, Brit. J. Dermat. **42**:445 (Oct.) 1930.

A case is described in a man, aged 52, who presented a generalized eruption of pink macules and petechiae, chains of enlarged glands in the neck and visibly enlarged inguinal glands. There were a few nodules in the skin and subcutaneous tissue of the face which had the appearance of "blind boils." Similar cutaneous or subcutaneous nodules were numerous on the upper limbs and trunk, but were almost completely absent from the legs. The glands were mostly discrete. Microscopic examination of a nodule removed from the neck showed a granulomatous structure with some necrosis in the central part. The picture was suggestive of Hodgkin's disease, but somewhat atypical. No tubercles were seen.

DERMATITIS OF THE AXILLAE DUE TO PARAPHENYLENEDIAMINE. M. S. THOMSON, Brit. J. Dermat. **42**:449 (Oct.) 1930.

The clinical histories in two cases which occurred in women, aged 50 and 35, respectively, are presented. In both cases an acute dermatitis of both axillae was present after the wearing of garments that were colored. The women both complained of excessive perspiration before donning the dresses.

ACRODERMATITIS PERSTANS AND ITS RELATION TO PSORIASIS. J. T. INGRAM, Brit. J. Dermat. **42**:489 (Nov.) 1930.

Ingram discusses the relationship of certain cases of acrodermatitis perstans to psoriasis. He refers to Radcliffe-Crocker's description of dermatitis repens, its probable neuritic origin and the acceptance of *Staphylococcus pyogenes-aureus* as the causal organism. Acrodermatitis suppurativa continua of Hallopeau and Audry is also described, and he refers to cases reported in the literature and the various theories as to its etiology. Reviewing the cases reported in the latter group, Ingram thinks it justifiable to distinguish two distinct groups: an infective and a noninfective group. The infective group included cases proved beyond a reasonable doubt to be due to *Staphylococcus aureus;* and the condition is regarded as a chronic pyogenic dermatitis. The noninfective group included cases in which *Staphylococcus aureus* plays no part, and in which the lesions on bacteriologic investigation prove to be sterile. It is with the latter group that Ingram deals in his article and presents the records of four cases, which seem to bear on the relationship of this noninfective group to psoriasis. He stresses the uniform pinhead-sized character of the "lakes of pus" in the first three cases he describes and the absence of any organism on bacteriologic investigation. These cases impress Ingram as fitting clearly into the second noninfective group of diseases still described under the term "acrodermatitis perstans." The following points in common to all four of his cases are (1) the absence of injury, except possibly the injury of an ingrowing toe-nail in his second case, or of any demonstrable septic focus; (2) the completely sterile nature of the lesions on ordinary bacteriologic investigations; (3) the presence of sodden white vesicles in the clefts between the toes, with no evidence of fungus infection and no response to treatment for such infections. The author's fourth case was that of a typical rupioid psoriasis of the trunk and extremities in a man, aged 57, and four photographs of the eruption in various locations are presented. Attention is drawn to the clinical and histologic relationship between certain cases of acrodermatitis perstans and psoriasis, and four photomicrographs are presented for comparison, two from a case of psoriasis and two from a lesion of acrodermatitis perstans (case 2).

Ingram feels that in dermatitis repens and closely allied diseases of the extremities, as well as in the generalized pustular dermatoses reported by Barber, we have a definite staphylococcal infective dermatitis and that the term "acrodermatitis perstans" should either be confined to this group of cases, or preferably that it should be entirely withdrawn from this group. Quite distinct from this group of pustular dermatoses is a class of cases with the essential characters originally emphasized by Hallopeau, which yield negative results on bacteriologic examination and do not respond to any line of treatment up to the present time. In this group Ingram places the cases he has described as examples of a mild, a typical and a generalized case. He further suggests that this second group is related to, and is possibly a manifestation of, psoriasis, and that the term "pustular psoriasis" used by MacLeod is an appropriate one for this group.

ACRODERMATITIS CONTINUA VEL PERSTANS (DERMATITIS REPENS) AND PSORIASIS PUSTULOSA. H. W. BARBER, Brit. J. Dermat. **42**:500 (Nov.) 1930.

Barber discusses in detail the subject of acrodermatitis continua and pustular psoriasis with particular reference to the differences between the two conditions. He prefers to designate the so-called acrodermatitis perstans of mild type by the name pustular psoriasis of the extremities. The essential clinical differentiating points are clearly presented together with a detailed discussion of the micropathology and the presentation of eleven photomicrographs to illustrate the points discussed. A detailed history of a case of acrodermatitis continua in a woman, aged 41, is presented together with the histories of four cases of pustular psoriasis. Five photographs of the varied cutaneous manifestations in the cases of psoriasis are presented.

The following conclusions are made by Barber from his observations and studies:

1. The condition described by Crocker as "dermatitis repens" is identical with the "acrodermatitis continua" of Hallopeau, and may be conveniently termed "acrodermatitis perstans." It is a specific entity, with characteristic clinical, histologic and bacteriologic features and must not be confused with other eruptions, which, like it, are chronic, often very resistant to treatment, and sometimes chiefly localized to the extremities; these are eczematoid ringworm and moniliasis, epidermophytides, infective eczematoid dermatitis and psoriasis. Cases have been described under the term "acrodermatitis perstans" which were not really examples of this condition.

2. In the majority of cases the eruption is limited to the extremities, but rarely may become generalized. The histologic picture is the same both on the extremities and elsewhere.

3. The history of an initial injury, the successive involvement of the nails of the hands and feet, the appearance of fresh lesions as discrete pustules on healthy skin, which enlarge and may form the starting point of new patches of dermatitis repens, and the invasion of the mucous membranes, particularly of the mouth, even in the localized type of the disease, are some of its most striking features.

4. The onset and evolution of the eruption, and the results of bacteriologic and serologic investigations by different observers, point, he thinks, conclusively to the view that it is due to invasion of the skin, and often the mucous membranes, by a strain of *Staphylococcus pyogenes-aureus* possessing distinctive pathologic activities, in that it grows freely on mediums that as a rule inhibit staphylococcal growth.

5. Entirely distinct from acrodermatitis perstans is a scaly, pustular eruption of the extremities, suggestive at first sight of a fungus infection. Its principal characteristics are:

(*a*) Its tendency to exact bilateral symmetry.

(*b*) Its sites of election, viz., the thenar eminences and adjacent part of the palm and the central part of the sole toward the inner side of the instep.

(*c*) The formation of groups of intra-epidermic pustules in reddened scaly patches and not as isolated lesions on previously normal skin, for the most part small and discrete, but sometimes becoming confluent; these dry up to form brownish "scabs" in the horny layer.

(*d*) The occurrence of periodic acute exacerbations, with congestion of the patches, the rapid formation of new pustules, increased exfoliation and subjective sensations of heat, throbbing or actual pain, followed by remissions in which the patches become paler, are studded with brownish scabs, and their horny layer becomes more normal looking.

(*e*) The absence of suppurative paronychia and of involvement of mucous membranes; the nails, if involved, show the pitting and other changes seen in psoriasis.

(*f*) The negative results of microscopic and cultural examination for fungi and pathogenic bacteria; frequently cultures are completely sterile.

6. The assocation of this eruption in certain cases with typical psoriasis in its habitual dry scaly form, as has been described, suggests that it is a pustular variety of this disease. The bilateral symmetry, and remarkable amicrobial character of the lesions are additional features that favor this view.

7. Its histologic features are identical in kind with those of ordinary psoriasis, the differences depending merely on the degree of leukocytic (mononuclear and polymorphonuclear cells) infiltration of the dermis and epidermis.

8. Three types of pustular psoriasis can be recognized:

(*a*) Those in which the pustular lesions are practically confined to the palms and soles.

(*b*) Those in which there may be pustulation on patches of wide distribution; this type may closely simulate acrodermatitis continua.

(*c*) Those in which the pustulation may be an intermediate stage in the transition of ordinary psoriasis into a generalized exfoliative dermatitis. This transformation would appear to accompany a general septicemic infection — in Barber's case, *Streptococcus longus.*

WIEN, Chicago.

THE PROBLEMS OF MELANOMA. J. EWING, Brit. M. J. **2**:852 (Nov. 22) 1930.

The author believes that the nevus cell is not a down-wandering epithelial cell nor an endothelial cell but is a derivative of specialized cells in the sensory nerve-endings. In the nerve nevus, the nevus cell produces pigment and becomes the chromatophore. It is uncertain whether chromatophores may have any other origin, but once it is formed the adult chromatophore seems to function in many respects independently of the nevus cell.

The epidermis contains special cells resembling epithelial cells about which arborize the terminal filaments of sensory nerves. These are the tactile corpuscles of Merkel-Ranvier, and they are probably similar in nature to the nevus cells of the deeper nerve end-organs. In addition, there are in the epidermis wandering pigmented chromatophores which seem to be genetically related to the tactile corpuscles.

In the production of a melanoma there is proliferation of nevus cells and chromatophores, but often the epithelium also seems to take an active part. In cases of intra-epidermal melanoma, however, it has been shown that the epidermis contains elements which are capable of producing both chromatophores and cells of the nevus type. It may be assumed, therefore, that the participation of the epithelium is only apparent and that the actual tumor cells are derived from the special cells lying in the epidermis.

There are numerous data which relate melanoma to neurofibromatosis, such as pigmentation of the skin in the latter, the frequent association of the two and the occurrence of melanoma as a late manifestation of neurofibromatosis.

The occurrence of nevi and melanomas following trauma to areas free from pigmented moles may be explained by the presence of specialized neurogenous cells in the epidermis and corium which are capable of giving rise to these tumors.

CARO, Chicago.

MAJOR DERMATOSES OF CHILDREN. W. J. O'DONOVAN, Brit. M. J. **2**:956 (Dec. 6) 1930.

The writer considers here chronic seborrhea capitis and flexural prurigo. In seborrhea capitis of the chronic type which has not responded to topical applications, O'Donovan epilates the entire scalp with either x-rays or thallium acetate. In the latent period after x-ray epilation, the nineteenth day, shock is obtained with protein so that the period of fever corresponds to the time of epilation. When the hair falls, a glycerin lead subacetate lotion is applied until the skin appears normal. The writer considers and treats flexural prurigo as a neurodermite rather than as eczema.

RATTNER, Chicago.

REFLECTIONS ON PROTEIN THERAPY OF CANCER. M. RUBENS-DUVAL, Bull. et mém. Soc. méd. de Paris, Nov. 14, 1930, p. 469.

According to the author, defense reactions take place in the organism against cancer. It is probable that cancer cures which are produced by local treatment (by surgery or radiation) are due not only to the destruction of the cancer cells but also to complementary defense reactions taking place in the organism.

The cytolysis of young cancer cells is dangerous because it liberates substances capable of exciting cellular proliferation. But also other substances may be liberated which are immunizing the body against cancer cells. To isolate the latter in order to utilize them in cancer therapy was the purpose of the research work done by the author during several years. These substances are specific for each variety of cancer. They are administered in homeopathic doses and in extreme dilution, given daily and continuously.

The author intends to communicate later the results of this specific protein treatment of cancer.

BLOOM, New York.

DISINFECTION EXPERIMENTS WITH FUNGI (ACHORION GYPSEUM). E. KADISCH, Dermat. Wchnschr. **91**:1771 (Dec. 6) 1930.

The vapors of menthol, thymol and naphthalene seem to have a stimulating effect on *Achorion gypseum* when the exposure is short. In longer exposures, menthol and thymol first inhibit the growth, and if sufficient time is given, kill the fungus, thymol acting considerably more rapidly. Naphthalene inhibits the growth of the fungus without killing it, even in long exposures. The author suggests that this chemical may be hung in a culture tube for the purpose of demonstration as it does not alter the appearance. Alcohol, 70 per cent, kills the fungus but is somewhat less active than denatured spirit. For practical disinfection of stockings, etc., one of the following is suggested: (*a*) exposure of the clothing for a week in an air-tight container in which a sack of thymol has been hung; (*b*) soaking of the material for five minutes in a 1 per cent solution of thymol in denatured alcohol. Experiments have shown that neither of these procedures damages silk materials.

THE EPIDEMIOLOGY OF THE ORIENTAL BOIL IN PALESTINE. T. CANAAN, Dermat. Wchnschr. **91**:1779 (Dec. 6) 1930.

Before the war, oriental boil was found in Palestine only in Jericho. Since the war, this disease has become no rarity in Jerusalem. This is explained by the improved roads and greater traffic between Jericho and Jerusalem. The necessary secondary host, the sandfly, is common in both regions.

CONTRIBUTION TO THE KNOWLEDGE OF THE SARCOIDS OF THE SKIN. LUDWIG PUHR, Dermat. Wchnschr. **91**:1815 (Dec. 13) 1930.

The author concludes that sarcoids of the skin (Spiegler type) are the expression of systemic disease of the reticulo-endothelial or histiocytic system. This conclusion is based on:

1. The morphology: endothelial structure, histiocytic elements and angiomatous portions.

2. The biologic properties: marked blood pigment phagocytosis.

3. The clinical properties: multiple lesions, relative benignity, eventual spontaneous cure.

4. The marked influence of arsenical preparations.

CASES OF RHINOSCLEROMA OBSERVED IN MOSCOW. ARTHUR JORDAN, Dermat. Wchnschr. **91**:1820 (Dec. 13) 1930.

Two cases of rhinoscleroma are reported. In both, the rhinoscleroma bacillus of Frisch was found, and both were improved by roentgen radiation. The author observes that since the World War, the incidence of this disease has increased in the vicinity of Moscow.

THE TREATMENT OF LATE ROENTGEN DAMAGE OF THE SKIN. ERICH UHLMANN. Dermat. Wchnschr. **91**:1825 (Dec. 13) 1930.

Three cases of late ulcerative radiodermatitis are described in which the application of an ointment containing a small amount of radium emanation (radon) resulted in healing of the ulcers and prompt relief from pain.

RECENT RESULTS OF THE EXPERIMENTAL RESEARCH IN SYPHILIS FOR THE BIOLOGY OF HUMAN SYPHILIS. S. BERGEL, Dermat. Ztschr. **59**:357 (Nov.) 1930.

The author has obtained an extract from the lymph glands and syphilitic lesions of experimental animals which is strongly spirocheticidal. When this extract is mixed with virulent spirochetes, a granular degeneration of most of them can be observed on dark-field examination. The speed and completeness of this degeneration depends on the strength of the extract. If it is very weak, the action is demonstrably stimulating. It is reasonable to believe that changes produced by the protective forces of the organism or by drugs may cause the spirochete to affect special tissues. Certain differences which are noted between the manifestations in animals infected with the Nichols strain of spirochete and those infected with the Truffi strain are maintained through many animal passages, but eventually these differences disappear. The author has demonstrated an increased lipoid content in the connective tissue cells and the adventitia of the blood vessels of certain syphilitic lesions. He believes that a change in the lipoid metabolism is directly connected with the appearance of the Wassermann reaction.

CHEMICAL ANALYSIS OF THE HYPERSENSITIVITY OF THE SKIN FOLLOWING EXPERIMENTAL SENSITIZATION WITH ARSPHENAMINE. E. NATHAN and H. GRUNDMANN, Dermat. Ztschr. **59**:367 (Nov.) 1930.

Nine patients were sensitized by the intracutaneous injection of 0.1 cc. of 1 per cent solution of myoarsphenamine (a formaldehyde-sulphite-arsphenamine). These patients were subsequently tested by intracutaneous injections of 1 per cent solutions of various allied chemicals. There was no hypersensitiveness to arsenic-free aromatic organic compounds, similar to arsphenamine in their structure, or to inorganic arsenicals or arsenic compounds of the aliphatic group such as sodium cacodylate. All of the variations of arsphenamine tested produced positive reactions.

THE TREATMENT OF DARIER'S DISEASE. V. WUCHERPFENNIG, Dermat. Ztschr. **59**:374 (Nov.) 1930.

Darier's disease may be influenced favorably by roentgen irradiation. The use of Grenz rays is contraindicated on account of technical difficulties. It is important to regulate the dose and quality carefully as a small variation from the optimum dose results in an unsatisfactory result. The dose advised is from 550 to 650 R given with a filter of 0.5 mm. of aluminum and with 87 kilovolts. Two illustrative cases are described.

CONCERNING THE FINDING OF SCHIZOSACCHAROMYCES IN SEBORRHEIC ECZEMA. F. BERNSTEIN, Dermat. Ztschr. **59**:385 (Nov.) 1930.

In twenty cases of pityriasis capitis and twenty-three of pityriasis capitis associated with seborrheic eczema of the body, cultures failed to reveal Benedek's *Schizosaccharomyces*. Allergic tests in twenty-five of the patients showed no specific result. The fungus was shown to be unusually resistant, and the author suggests that accidental infections in the laboratory may explain the positive results reported by others.

TAUSSIG, San Francisco.

DERMATOLOGIC ABSTRACTS

The Journal of the American Medical Association

Syphilis of Aorta and Heart. H. S. Martland, Am. Heart J. **6**:1 (Oct.) 1930.

Martland feels that, from a clinical and pathologic standpoint, syphilis of the aorta and heart should be regarded as an acquired disease (congenital cases being infrequent) developing insidiously and showing symptoms years after the initial infection. It is possible to recognize clinically and to diagnose an early aortitis, an aortic regurgitation, a narrowing of the coronary ostia, an aneurysm, or any combinations of these lesions. Treatment and prognosis should be based on such recognition. The myocardium in syphilis is frequently normal. When the aortic valve is involved, the main myocardial lesion is hypertrophy. Inanition atrophy is occasionally encountered. Specific lesions of the myocardium are infrequent, and, when they occur, are so slight in extent as to be of little practical importance. It is safer and better to assume that the coronaries distal to the aortic wall are usually normal in pure, uncomplicated syphilis, and that coronary occlusions, anemic infarcts, necrosis of the heart muscle, replacement fibrosis, aneurysms of the ventricular walls and fibrous myocarditis are almost entirely due to coronary injury dependent on an arteriosclerotic process and have nothing to do with syphilis. That rheumatism and other infections may also produce forms of interstitial myocarditis is obvious. But it appears that syphilis does not play an important part in the production of such lesions.

Microscopic Pathology of Cardiac Syphilis. C. C. Maher, Am. Heart J. **6**:37 (Oct.) 1930.

Five cases of uncomplicated and probably untreated aortic regurgitation were studied microscopically by Maher. The inflammatory reaction, presumably due to syphilis, by exclusion of other factors was found to be a lymphocytic and plasma cell infiltration about the coronary arteries and their branches and beneath the visceral pericardium. In the muscular tissue the invasion appeared between the fibers and can be demonstrated about the capillary walls.

Localization of Syphilitic Virus in Aorta. J. W. McMeans, Am. Heart J. **6**:42 (Oct.) 1930.

McMeans believes that in syphilitic aortitis the intima is involved primarily by direct infection from the blood stream. It may also be involved from the adventitia through the vasa vasorum. Histologically, the lesions are the same. Undoubtedly, the most serious lesions produced by syphilis on the aorta and heart are syphilitic aortic endocarditis with regurgitation and occlusion of the coronary orifices. This is intimal disease. Therefore, it would appear that syphilitic intimal disease of the aorta is more important clinically than is medial disease.

Heart and Aorta in Acquired and Congenital Syphilis. C. M. Kurtz and J. A. E. Eyster, Am. Heart J. **6**:67 (Oct.) 1930.

A series of fifty-four cases of acquired and twelve cases of congenital syphilis is presented by Kurtz and Eyster, with especial reference to the fluoroscopic observations in the heart and aorta. Fluoroscopic evidence of aortitis was found in 90.7 per cent of the cases of acquired syphilis and in 36.4 per cent of the cases of congenital syphilis. Aneurysm of the aorta was found in 18.5 per cent of the cases of acquired syphilis and was absent in all the congenital cases. Cardiac

enlargement was present in 38.9 per cent of the cases of acquired syphilis. In a group of twenty-three cases of acquired syphilis, exhibiting primarily disease of the central nervous system, 95.7 per cent showed evidence of aortic involvement, and aneurysm could be demonstrated in 21.8 per cent.

SYMPTOMS AND COURSE OF SYPHILITIC AORTIC INSUFFICIENCY. R. W. SCOTT, Am. Heart J. **6**:86 (Oct.) 1930.

Scott made postmortem clinical observations in 107 cases of syphilitic aortic insufficiency. Syphilitic involvement of the aortic orifice may appear as early as five years and as late as forty-eight years after the primary infection. The average time interval is around twenty years. Free aortic regurgitation appearing out of a clear sky in an adult with a negative cardiac history, and with no evidence of acute infection, should be regarded as syphilis until proved otherwise. Substernal pain and anginal attacks are not important symptoms in the type of cases here considered. Syphilitic aortic insufficiency is more common in the Negro than in the white person. The appearance of congestive heart failure in a patient with syphilitic aortic insufficiency is a grave omen.

DIAGNOSIS OF SYHILITIC AORTITIS WITH NEGATIVE WASSERMANN REACTIONS. S. A. LEVINE, Am. Heart J. **6**:116 (Oct.) 1930.

In the forty cases of syphilitic aortitis reviewed by Levine, the Wassermann reaction in the blood was negative in twelve instances. There remained four cases in which there was no history of syphilis and no evidence of either aneurysm or aortic insufficiency. Such cases might be diagnosed in life by more careful roentgenologic study and by the occasional finding of a positive Wassermann reaction after a provocative test, combined with other clinical data that in general point to syphilis.

RELATION OF SYPHILIS TO HYPERTENSION. E. F. HORINE and M. M. WEISS, Am. Heart J. **6**:121 (Oct.) 1930.

A group of 666 patients with essential hypertension was studied by Horine and Weiss to determine whether syphilis was a possible etiologic factor. A control group of 2,000 nonhypertensive patients of similar ages and economic status was studied. The incidence of syphilis was practically the same in the hypertensive group as in the control group. Syphilis cannot have any etiologic bearing on essential hypertension.

CARDIAC OBSERVATIONS IN CHILDREN WITH CONGENITAL SYPHILIS. G. PREVITALI, G. H. B. NICOLSON and D. MOON-ADAMS, Am. Heart J. **6**:128 (Oct.) 1930.

In contrast to the conditions found in acquired syphilis, Previtali et al. were not able to detect, by available methods of physical examination, any cardiovascular lesion in the fifty cases of congenital syphilis examined.

HEART DISEASE IN CHILDREN DUE TO CONGENITAL SYPHILIS. T. B. GIVAN, Am. Heart J. **6**:132 (Oct.) 1930.

Four hundred and seventeen patients with congenital syphilis ranging in age from 3 months to 42 years were studied by Givan with reference to heart disease being caused by *Spirochaeta pallida*. Up to the present moment not one of the cases has shown signs or other collected data that would lead one to make a definite diagnosis of syphilitic heart disease.

CONGENITAL SYPHILIS AS CAUSE OF HEART DISEASE. H. MCCULLOCH, Am. Heart J. **6**:136 (Oct.) 1930.

McCulloch asserts that there is no evidence in this study, that congenital syphilis contributes to the incidence of heart disease in children up to the age of 15 years. That heart disease and sudden death may follow this type of infection later in life is not made clear by this study, but it may be supposed that instances of this sequel would be about equal to those that follow other acute infections of childhood.

INTRAVENOUS ARSENICALS IN TREATMENT OF CARDIOVASCULAR SYPHILIS. L. E. HINES and J. G. CARR, Am. Heart J. **6**:142 (Oct.) 1930.

A clinical study on the effect of neoarsphenamine on the symptoms of patients with cardiovascular syphilis is presented by Hines and Carr. Symptomatic improvement is believed to be a neoarsphenamine effect in 57 per cent of the cases. Twelve per cent showed aggravation of symptoms; probable anatomic damage was produced in three patients. No cases of sudden death or aneurysmal rupture were noted. A higher percentage of improvement is noted in patients who have syphilitic aortitis without definite aneurysm or aortic regurgitation. If the drug is cautiously administered in small doses, patients functionally classed 2 b (American Heart Association) may be benefited by the drug. Improvement in the serologic reactions of the blood does not always parallel the symptomatic improvement. Although the lives of patients with cardiovascular syphilis are perhaps prolonged by neoarsphenamine therapy, there is no evidence in any case studied which shows that the disease was permanently arrested.

TREATMENT OF CARDIOVASCULAR SYPHILIS. J. E. MOORE and J. H. DANGLADE, Am. Heart J. **6**:148 (Oct.) 1930.

Moore and Danglade assert that the treatment for cardiovascular syphilis is best accomplished by a combination of such routine medical measures as rest, restriction of activities and digitalis together with antisyphilitic treatment. An acceptable method of antisyphilitic treatment is based on the avoidance of therapeutic shock (the Herxheimer reaction) and the therapeutic paradox by starting treatment cautiously with bismuth compounds or mercury and the iodides, by the use of long courses of small doses of neoarsphenamine or bismarsen, and by the prolongation of treatment for a minimum of two years with alternation of these drugs. A study of forty-three patients with aortic aneurysm demonstrates that life may be prolonged from an average of nine months from the onset of symptoms in untreated patients, to an average of sixty-nine months in patients receiving one year or more of such treatment. A study of ninety patients with aortic regurgitation and eight with various other forms of syphilitic cardiovascular disease shows that life may be prolonged from an average of thirty-two months from the onset of symptoms in untreated patients to an average of sixty-five months in patients receiving one year or more of such treatment. These data seem to demonstrate that properly directed antisyphilitic treatment is of great value in cardiovascular syphilis.

PRINCIPLES UNDERLYING TREATMENT OF CARDIOVASCULAR SYPHILIS. U. J. WILE, Am. Heart J. **6**:157 (Oct.) 1930.

Wile emphasizes the fact that the treatment for syphilitic heart disease is always a treatment of the individual patient. Such cases as are amenable to an antisyphilitic regimen respond well if not pushed too hard and if it is begun before decompensation has occurred or after it has been temporarily relieved. The mechanical end-results of syphilitic disease of cardiovascular nature are in no way influenced by antisyphilitic treatment. In those cases of cardiovascular syphilis in which benefit is achieved, this not only occurs because of dispersion of active processes in the affected part of the cardiovascular system but in a large measure is due to the dispersion of remote foci elsewhere in the body. Such foci in

untreated patients must act as predisposing and contributory factors in the ultimate breakdown of the cardiovascular system. Fully compensated cases of cardiovascular syphilis which have a good background of early treatment are frequently cases which need not and should not be treated. Except for tryparsamide in certain selected cases of aortitis, better results are achieved by the conservative use of mercury, bismuth compounds and iodide than by the arsphenamines. These comments are not intended as dogmatic, incontrovertible statements of fact but are based entirely on personal experience.

GUMMA OF LIVER. J. FRIEDENWALD and T. H. MORRISON, Am. J. M. Sc. **180**:656 (Nov.) 1930.

The treatment for this condition, according to Friedenwald and Morrison, consists in the administration of iodides and mercury. The effect of these remedies is extremely favorable. The masses, ascites and other symptoms disappear, and the liver and spleen rapidly diminish in size. The administration of arsphenamine is dangerous and its use is contraindicated. They report ten cases.

FOLLOW-UP RESULTS IN SYPHILIS CLINIC. J. H. PUGH, J. H. STOKES, L. A. BROWN and D. CARNELL, Am. J. Syph. **14**:438 (Oct.) 1930.

The Syphilis Clinic of the University of Pennsylvania School of Medicine in the University Hospital charges a small fee or partial payment. It serves a mixed white and colored population, most of which comes from adjacent sections of the city of Philadelphia. In equipment and personnel it is above the average, being served by a full time staff of specialists in an environment fairly well suited to individualization, at hours, however, when many of the more responsible types of working patients find it impossible to attend. The results of follow-up through correspondence with apparently ineffective support from the department of public health were replies from approximately 30 per cent of all patients followed. The installation of personal follow-up and an automobile for the use of the workers, who made a visit immediately in the case of patients with infectious diseases and after the receipt of one letter in other cases, resulted in a doubling of the effectiveness of the return of patients to treatment (64 per cent). The cost of this doubling of efficiency was, however, at least four times that of the correspondence method, which makes it doubtful whether a clinic unaided by special private funds, as this one was, or unaided by state cooperation, could hope to utilize the personal method. Pugh et al. conclude, therefore, that it is more than suggested that follow-up should become a function of an active social arm of the public health services rather than a matter for private initiative. The personal follow-up described by the authors made it possible to determine that financial difficulties, unsuitability of hours, shortcomings of the clinic personnel in establishing rapport and educating its patients, and painful or incommoding reactions to treatment are, in varying proportions depending on the method of analysis, the overwhelmingly prevalent causes for the failure of patients with syphilis to continue under treatment and supervision until discharged. Between 50 and 60 per cent of patients lost through these faults in management can be recovered by personal follow-up, and 85 per cent of the reasons for lapse included in the entire survey are amenable to some degree of preventive adjustment. A limited experience with compulsion methods does not encourage the authors to believe them effective at least as they have seen them administered and leads them to emphasize the need for study and improvement of the clinic, its methods and its operation in serving its clientele, rather than a mere resort to externally applied legislation and force.

EARLY TREATMENT OF LATE SYPHILIS. J. F. MADDEN, Am. J. Syph. **14**:451 (Oct.) 1930.

The essential points brought out by Madden's study are these: By far the most important factor in the cause of late manifestations of syphilis is the lack of or inefficiency of treatment during the early stages of the disease. Only 2

of a total of 500 cases had anything like energetic treatment during the first year. Even in these 2 the rationale of the treatment was open to question. Physicians as a group know too little about the treatment for either early or late syphilis. The choice of drugs, their method of administration, the amount and length of time the drugs were given, all point to inadequate training on the part of the practitioner. It is suggested that more time, under competent teachers, be devoted to the diagnosis and treatment of syphilis in medical schools.

ACUTE ARSPHENAMINE COLLAPSE. G. J. BUSMAN and A. R. WOODBURNE, Am. J. Syph. **14**:477 (Oct.) 1930.

Busman and Woodburne report the case of a woman, aged 56, who had a four plus positive Wassermann reaction in both lipoid and cholesterolized antigens. Four decigrams of arsphenamine, "old salvarsan," were ordered and through an error the 4 dg. of "old salvarsan" were mixed in 10 cc. sterile distilled water and given into the left median basilic vein with the usual Luer syringe technic. The solution had not been neutralized nor was it properly diluted. The patient almost immediately became cyanotic, was seized with a spasm of severe choking cough, broke into a cold sweat and collapsed. She had severe cramps in the left arm. Ten minims of epinephrine chloride solution 1:1,000, was injected into the deltoid muscle at once and the symptoms of collapse were somewhat relieved. One gram of sodium thiosulphate in 10 cc. sterile water was given intravenously. The patient was then moved to a bed in the hospital and packed in hot water bottles and blankets. Epinephrine chloride solution, 1:1,000, 10 minims, was repeated and 1,000 cc. of Fisher's solution was started by enteroclysis. The cough was extremely painful and almost continuous. Pneumonia developed and the patient had a stormy time. She presented the picture of a severe embolic pneumonia of the right lower lobe with a distressing cough, and a chemical thrombosis of the left median basilic vein to the shoulder. She eventually made a complete recovery. The Wassermann reaction was negative in both the lipoid and the cholesterol antigen; the Kahn reaction also was negative. The authors are of the opinion that most acute arsphenamine deaths are analogous to their case and that their case would have gone on to a fatal termination without the prompt administration of sodium thiosulphate intravenously and the 10 minims of 1:1,000 epinephrine chloride hypodermically. After the acuteness of the reaction has subsided, the patient should be thoroughly alkalized and given daily intravenous injections of sodium thiosulphate, Fisher's solution by vein or bowel and such other treatment as is indicated in the particular case.

ARSENICAL PIGMENTATION OF SKIN. F. A. DIASIO, Am. J. Syph. **14**:483 (Oct.) 1930.

Diasio reports the case of a white man in whom a dermatitis exfoliativa developed while he was under treatment for syphilis. Apparently, sulpharsphenamine had been used. The erythrodermia was followed by a generalized pigmentation of the skin. Associated with the pigmentation were dystrophy of the nails, partial alopecia of the scalp and a congestive dermatitis of the hands.

CANCER OF BUCCAL MUCOSA. C. C. SIMMONS, Ann. Surg. **92**:681 (Oct.) 1930.

The results of treatment for carcinoma of the mouth by surgery and irradiation are compared by Simmons. In primary cases without clinical evidence of metastases, surgical treatment offers 40 per cent chance of a five year cure as against 8.5 per cent by irradiation. In primary cases with clinical evidence of metastases, irradiation offers no chance of permanent cure, and operative treatment 30 per cent. These figures are hardly fair, however, as only the most favorable cases were submitted to surgical treatment. On the other hand, no cases were cured by irradiation. Postoperative prophylactic roentgen treatment had no effect in preventing recurrence. Of the primary cases fatal because of recurrence, life was

prolonged by treatment, but life is longer following surgical treatment than irradiation. In the recurrent cases in which death occurs because of disease and in inoperable cases, life is distinctly prolonged by irradiation.

ULCERATION OF ABDOMINAL SKIN AND SUBCUTANEOUS TISSUES FOLLOWING OPERATION. L. FREEMAN, Ann. Surg. **92**:779 (Oct.) 1930.

A rare wound infection is described by Freeman, occurring principally, but not always, in connection with abdominal incisions. It begins usually in a stitch-hole a number of days following an operation and spreads slowly and indefinitely, causing marked induration of the skin, which is at first red, then livid and finally gangrenous. The process is accompanied by intense pain and tenderness and moderate fever, and may last for weeks or months, causing great physical and nervous exhaustion, and possibly resulting in death. The cause is obscure, although an ameba has been suggested by Cole and Heideman, and the symbiotic action of a streptococcus and a staphylococcus by Brewer and Meleny. It usually has been found in connection with suppurating wounds, but in Freeman's case it began in a stitch-hole, following primary union of a gallbladder incision without drainage. All ordinary methods of treatment usually have failed, the only effective remedy being the heroic use of the actual cautery.

TREATMENT OF LATE SYPHILIS WITH SINGLE STRAIN OF MALARIA. R. MOORE, California & West. Med. **33**:796 (Nov.) 1930.

Analytic evaluation of therapeutic results in 400 cases of dementia paralytica and cerebrospinal syphilis leads Moore to the conclusion that malaria treatment is able to support and revitalize physiologic defense mechanisms in many different types of late syphilis, and that malaria treatment may be useful wherever there is gradually developing syphilitic weakness. The use of malaria treatment should be considered wherever and whenever physiologic defense mechanisms give signs of failure in their struggle against syphilis.

SYSTEMIC BLASTOMYCOSIS. R. D'AUNOY and J. L. BEVEN, J. Lab. & Clin. Med. **16**:124 (Nov.) 1930.

The cases of systemic blastomycosis occurring at the Charity Hospital of New Orleans from 1906 to 1929 are recorded by D'Aunoy and Beven with detailed observations of the pathology in a typical case. Similarity of the gross and microscopic lesions in this condition with those present in tuberculous infections is again emphasized. This similarity necessitates the demonstration of the causal agent before positive differential diagnosis can be made. Lesions in the lungs comparable to Miller's types I, II and III of tuberculous bronchopneumonia were encountered.

USE OF TANNIC ACID IN BURNS OF CHILDREN. E. C. DAVIDSON, Minnesota Med. **13**:775 (Nov.) 1930.

In 62 per cent of the cases admitted to the Children's Hospital of Michigan during the past three years, the burn was due to some one leaving a pail of hot water unprotected, the filling of a bathtub with hot water, and the child falling into it, or due to a child pulling a kettle of hot water, soup or coffee from a stove spilling the contents over itself. This suggests that more than 60 per cent of the mortality and morbidity of burns in children is definitely avoidable and due to the negligence or carelessness of some one in leaving a pail of water unprotected or filling a bathtub with very hot water and waiting for it to cool, instead of drawing it at the desired temperature, or permitting a child to play around a stove on which something is cooking. The second important causative factor is playing with matches or around a bonfire. Twenty-five per cent of the cases were of this origin. Davidson describes the treatment employed in these cases and

commends highly the use of tannic acid because it lessens toxemia, is analgesic and prevents the loss of body fluid; secondary infection is markedly limited by the absence of a favorable nidus for bacterial growth; scar tissue formation has been less marked than that observed after treatment by other methods; the protective layer of coagulated protein forms a scaffold for the growth of the young epithelial cells over the denuded area.

TREATMENT OF PSORIASIS VULGARIS WITH INTRAVENOUS ADMINISTRATION OF ACRIFLAVINE HYDROCHLORIDE. S. E. SWEITZER and P. K. ALLEN, Minnesota Med. **13**:818 (Nov.) 1930.

Twenty cases of psoriasis vulgaris treated with intravenous injections of acriflavine hydrochloride are reported by Sweitzer and Allen. All but three cases of the series showed clinical improvement, and in four cases the results were striking.

VERRUCA PLANTARIS. J. N. SISK, Radiology **15**:564 (Nov.) 1930.

Sisk has made a study of fifty-three cases successfully treated by the roentgen ray. Three of the patients had had three treatments with electrodesiccation three months previous to roentgen treatment; they complained of pain with electrodesiccation and the result was unsuccessful. One patient had had one radium treatment of an hour's duration, without noticeable results. The surgical treatment has been observed in three cases; the result was satisfactory but the convalescent period was long and was associated with considerable pain and some disability. With the exception of two cases, pain was relieved after the fourth day following the first roentgen treatment and the convalescent period was about four weeks; the longest period was seven weeks, at which time all evidence of the growth had disappeared. The technic is a dose twice the time required to produce a mild erythema on the flexor surfaces, with unfiltered radiation limited to the bounds of the lesion, followed, if required, in three weeks by a dose of one and one-half erythema intensity. In only two cases was it necessary to give further irradiation —the greatest number of treatments was five in a single case. In none of the cases was there a period of disability. Many of the patients mentioned that the sites treated were slightly tender to pressure for a day or two, several days after the first treatment.

EFFECTS OF ELECTROCAUTERY ON NORMAL TISSUES. J. GOTTESMAN, D. PERLA and J. M. ZIEGLER, Surg. Gynec. Obst. **51**:667 (Nov.) 1930.

In a study made by Gottesman et al. of the effect of the electrocautery incision in the skin, muscle, liver, kidney and spleen in normal adult albino rats, it was found that the electrocautery incision produces extensive necrosis, which acts as a foreign body with a resulting foreign body giant cell reaction. The advantages and the disadvantages of the electrocautery are discussed. The promiscuous use of the electrocautery is discouraged.

READING OF RESULTS WITH KAHN TEST IN TINTED OR CLOUDY SERUM. B. S. LEVINE, U. S. Vet. Bur. M. Bull. **6**:867 (Oct.) 1930.

A technic has been devised by Levine to facilitate the reading of Kahn results in hemolyzed and highly tinted serum and in serum of doubtful reaction. A quantity of the serum, usually 1 cc., is placed in a tall serologic tube, and a wax pencil mark is made to indicate the meniscus of the fluid. Two parts of saline solution (in this instance 2 cc.) are now added to the tube, and the contents well mixed. The tube now contains three volumes (3 cc.) of fluid. To this are added two parts (2 cc. in this case) of a saturated solution of ammonium sulphate, and the contents of the tube are shaken. The tube is now centrifugated at high speed (about 3,000 revolutions per minute) for fifteen minutes. The precipitate must become

well packed at the bottom of the tube. The supernatant fluid is then thoroughly drained and saline solution added to the wax pencil mark, thus bringing the contents of the tube to the original volume of the serum (1 cc.). The tube is shaken until the entire precipitate is dissolved. It is again centrifugated to remove all extraneous suspended matter, and the clear fluid is poured into another tube and used in the precipitation test, which is conducted in exactly the same manner as prescribed by Kahn for serum (5). That is, into each of three Kahn tubes antigen-saline mixture is placed in 0.05, 0.025 and 0.0125 cc. quantities; then to each of the tubes are added 0.15 cc. of the clear and colorless fluid containing the dissolved precipitate. The tubes are shaken for three minutes; 1, 0.5 and 0.5 cc. of saline solution are added, respectively; the tubes are again shaken for a short time, and the results are read. Highly tinted serum is rendered practically colorless, and chylous and turbid serum becomes clear. Bile-stained serum is cleared of extraneous substances which might cause confusion in the end-results. Doubtful reactions occasionally change in their intensity to become stronger or slightly weaker, but are clearcut wherever the precipitate is the result of interplay of immunologic factors. The procedure is in accord with the Kahn test in every respect.

COINCIDENT CARCINOMA, TULAREMIA AND SYPHILIS. V. L. MINEHART, U. S. Vet. Bur. M. Bull. **6**:880 (Oct.) 1930.

Minehart relates the case of a man, aged 39, who, while driving his car, ran over a large jack rabbit. Soon afterward one of the front tires went flat and he got out to change tires. While removing the old tire he noticed that it was well covered with rabbit hair and blood. Incidentally, while changing the tire he suffered an abrasion on his left foot. This he examined and applied a temporary dressing. He remained in his usual health for a week or ten days and then became quite ill, with malaise, chills, fever and severe headaches. The abrasion on his left foot also showed signs of irritation. His blood serum was positive for tularemia. He remained in the hospital for about four months, when he was discharged, improved. In a few days, however, he became seriously ill again. His blood was again examined. The result of the Wassermann test was 100 per cent positive for syphilis and negative for *Bacterium tularense*. Despite intensive treatment, the patient succumbed. At necropsy, among other things, an infiltrating new growth was found about the right kidney. This proved to be hypernephroma, primary, in the right suprarenal gland, with metastases to the liver and lungs; this is another example of a cancer unsuspected before death.

PASTE BANDAGE FOR TREATMENT OF VARICOSE ULCERATION. C. J. CELLAN-JONES and K. M. CELLAN-JONES, Brit. M. J. **2**:560 (Oct. 4) 1930.

The paste devised by the Cellan-Joneses contains the following substances in parts by weight: zinc oxide, 10; glycerin, 10; sterilized refined glue, 4; acacia, 5, and water, 30. When cold, this is a viscous medium which becomes much more fluid on warming. A sufficient quantity is placed in a double-jacketed basin and warmed by hot water. A bandage of requisite length and width is wound on one roller of the machine and carried through the basin, under a series of crossbars, to a second roller, where it is rewound after being thoroughly soaked in the warm paste. In this way a bandage impregnated with zinc oxide and possessing highly adhesive properties is produced. The bandages are wrapped in grease-proof paper and are stored ready for use in air-tight tins. They never solidify but remain soft, sticky and quite pliable, even when kept for months. No preparation is required before they are applied in the same fashion as ordinary cotton bandages.

HERPES ZOSTER OF FIFTH LUMBAR NERVE. R. WATERHOUSE, Lancet **2**:1015 (Nov. 8) 1930.

Waterhouse records the case of a woman, aged 74, suffering from typical herpes zoster, evidently resulting from inflammation of the fifth lumbar nerve

root ganglion on the right side. The vesicles covered the dorsum of the foot and of the first three toes, and the inner half of the fourth toe; vesicles were also present on the ventral aspect of the first three toes. In addition, they occupied the whole of the outer surface of the leg below the knee, two particularly prominent collections being present in the area adjacent to the head of the fibula. But what is of peculiar interest is the fact that in the center of the posterior aspect of the thigh, midway between the fold of the buttock and that of the knee, was situated an oval patch of vesicles measuring 2½ inches (6.3 cm.) from above downward, and about 1¼ inches (3.7 cm.) from side to side; higher up was another similar but larger patch commencing 1 inch (2.5 cm.) above the termination of the internatal cleft and extending downward and outward, across the buttock, for about 6 inches (15.24 cm.) and being about 2¼ inches (3.1 cm.) in breadth. The importance of this case consists in the light it throws on the sensory distribution of the fifth lumbar nerve, since it is extremely improbable that more than one nerve root was involved.

INTERRELATION OF NEUROSYPHILIS AND CARDIOVASCULAR SYPHILIS. F. BACH and C. WORSTER-DROUGHT, Lancet **2**:1109 (Nov. 22) 1930.

A series of twenty-five cases of neurosyphilis among the younger patients attending a hospital for diseases of the nervous system on account of neurologic symptoms were investigated by Bach and Worster-Drought from both the cardiovascular and the neurologic aspects. In a series of twenty-five cases of cardiovascular syphilis at a comparable age in a hospital for diseases of the heart, similar observations were made on the nervous and cardiovascular systems of patients presenting cardiac symptoms. Of the twenty-five cases of neurosyphilis, only one showed definite clinical evidence of syphilitic aortitis, and in another case there existed signs suggesting this condition. Four cases showed signs of arteriosclerosis and hypertension. Of twenty-five cases of cardiovascular syphilis, four showed evidence of neurosyphilis. Two of these patients were suffering from tabes dorsalis and two showed characteristic pupillary changes. Roentgen examination revealed the presence of increase in the aortic shadow characteristic of syphilitic aortitis in only two cases in the neurosyphilitic group, while in the series of cases of cardiovascular syphilis all twenty-five yielded this positive result. With the electrocardiograph, low voltage curves were found in eight of the cases of neurosyphilis, but no definite abnormalities. Of the twenty-five cases of cardiovascular syphilis, twenty showed abnormalities; in particular, prolongation of the intraventricular conduction time was noted in five cases, and alteration of T_1 in twenty cases. Even with modern instrumental methods of diagnosis, relatively few cases of neurosyphilis (8 per cent) showed clinical evidence of cardiovascular syphilis. Similarly, however, relatively few cases of cardiovascular syphilis (16 per cent) revealed signs of neurosyphilis. This is in contrast to figures from German clinics. Early signs suggesting a diagnosis of syphilitic aortitis are: (1) accentuation of the aortic second sound; (2) on roentgen examination, enlargement to the left and slight fulness, especially to the right, of the first part of the aorta, and (3) in the electrocardiogram, abnormalities such as widening of the Q R S complex and flattening or inversion of the T wave, especially in the first lead.

HONGKONG FOOT. T. J. KUROTCHKIN and F. K. CHEN, Nat. M. J., China **16**:556 (Oct.) 1930.

Kurotchkin and Chen report the results of microscopic and cultural examinations of 150 normal persons, 16 suspected of Hongkong foot and 38 affected with typical lesions. The examinations of normal persons showed that in a certain number of cases an organism corresponding in its characteristics to *Trichophyton pedis var.* α was isolated. The question of the pathogenicity of this fungus is not considered here as being finally settled, but in view of the fact that the same organism was found on several occasions in patients suffering from Hongkong

foot infection, it seems probable that the fungus is responsible for certain cases of the disease. It is also suggestive that in the examination of persons suspected of Hongkong foot, the same fungus was present in a higher percentage than in normal persons. This observation gives a certain support to the idea that carriers of pathogenic fungi may be found among a limited number of normal persons and among those with a history of the infection in the past. Especial attention was given in this work to the occurrence of yeastlike fungi in the scrapings from the interdigital spaces of the persons examined by us. In no instance of 204 cultural examinations were yeastlike fungi grown.

INTRA-EPIDERMAL INOCULATION AS METHOD OF DIAGNOSIS OF CHANCROIDAL LESIONS. P. RAVAUT, RABEAU and D. HESSE, Presse méd. **38**:1393 (Oct. 15) 1930.

Ravaut et al. describe a method of diagnosis of chancroidal lesions by inoculating the fresh exudates of the lesions into the epidermis. Thirty-three patients were included in the experiments, some of whom presented chancroidal lesions of the genitalia or of the anus, others buboes. Since in a few patients both types of lesions were present, the study really included forty-six cases. Tests were made by examination on slides, cuti-inoculations, intra-epidermal inoculations and intradermal reactions of Dmelcos. The results were considered positive only when papulo-ulcerous lesions with Ducrey's bacilli were produced experimentally. Intra-epidermal inoculation produced positive reactions in eighteen of the cases (40 per cent), which results were far superior to the methods of cuti-inoculation and examination on slides, which gave, respectively, 4 per cent and 20 per cent of positive reactions. The Dmelcos reaction gave a larger proportion of positive results (65 per cent), but there is always a suspicion that the patient has been previously infected by the Ducrey bacillus; moreover, the presence of the organism is the best proof of the nature of a lesion. Of the twenty-five cases in which intra-epidermal inoculation produced doubtful results (i. e., papulo-ulcerous or papular lesions without Ducrey's bacilli), other methods revealed the presence of the bacilli in eight cases. In several of these cases the chancroidal lesions involved were mild. Even though the results are not always conclusive, the method of intra-epidermal inoculation seems to the authors to deserve an important place among the methods of diagnosis of chancroidal lesions.

ETIOLOGY AND PATHOGENESIS OF ERYTHEMA NODOSUM. P. FORNARA, Pediatria **38**:1033 (Oct.) 1930.

Fornara reviews the literature on the etiology and pathogenesis of erythema nodosum. He presents two cases of contagion of the disease. The first case was that of two brothers, sons of a tuberculous patient. The sister of the patients presented a similar picture to that of the brothers, but no cutaneous lesions appeared. The second case was that of a child who contracted the disease from a neighbor. The author concludes by saying that erythema nodosum is an autochthonous disease. It is contagious in some persons. The cutaneous lesions appear only in tuberculous patients with hyperallergy to tuberculin.

BLOODLESS TREATMENT OF CARBUNCLE IN RURAL COMMUNITIES. C. PÉREZ-CABALLERO PALACIOS, Siglo méd. **86**:321 (Sept. 27) 1930.

Pérez-Caballero Palacios states that in most instances the local treatment for carbuncle is ineffective. General treatment gives better results, because it checks general sepsis. The author advises the following method: As soon as the patient is observed, an intravenous injection of 0.3 Gm. of neoarsphenamine and six hours later a subcutaneous injection of 10 cc. of anticarbuncle serum are given. Both injections are repeated the next day, the dose of the injection of neoarsphenamine being increased to 0.45 Gm. As local treatment, small compresses soaked in a

2:1,000 solution of mercuric chloride are applied during the first twenty-four hours. During the second day, the local treatment is varied slightly: the surrounding areas of the pustule are protected with an absorbent paper and just one drop of a 1:1,000 solution of mercuric chloride is instilled over the pustule and allowed to evaporate. Then another drop is instilled and so on until 15 drops are administered during the day and another 15 drops during the night. The author has obtained good results in more than twenty cases within two days. The treatment is efficient, painless and economical, and no scar is left. The principal indication for the method is its use in rural practice.

TARRED STREETS AS CAUSE OF CANCER. K. B. LEHMANN, Arch. f. Hyg. **104**:105 (Sept.) 1930.

In determinations of the tar content of the air raised from tarred streets by the passage of automobiles over them, Lehmann found that during an eight hour ride approximately 10 meters behind an automobile on a tarred street only 1.5 mg. of tar passed off into the air. He believes that this amount is too small to make tarred streets a factor of any importance in the etiology of cancer either of the skin or of the lungs.

WOUND HEALING UNDER ADHESIVE PLASTER BANDAGE. E. DABASI, Arch. f. klin. Chir. **161**:117 (Aug. 26) 1930.

Experience has convinced Dabasi that both the number and the virulence of bacteria are lessened under an adhesive plaster bandage. In the course of the treatment the underlying tissues reach a state of alkalosis in most cases. In 100 cases treated in this wise there was not a single complication or a spread of the infection. Healing of the wounds progressed very favorably. In fact, the author stresses the importance of moisture in favoring the healing of wounds and points out that even pus is of value in that respect, provided it does not contain harmful elements, especially bacteria. Here the adhesive plaster bandage is of value because of its effect on the bacteria without hindering secretion in the wound, which is needed to promote healing. Furthermore, it is cheap, is applied easily, is taken off easily and never causes the patient pain. It should be changed every ten or twelve days, at the latest; the author prefers to do this every four or five days. The duration of the treatment varied from fourteen to thirty days, instead of months or even years, and the scar is less disfiguring than with the treatment usually employed. The method should not be used in cases of progressing suppurations; that is, when there is an evident tendency to spread, which calls for more radical measures.

SYPHILIS OF MAMMARY GLAND. H. AKAIWA, Beitr. z. klin. Chir. **150**:18 (July 26) 1930.

Akaiwa says that the female breast may be the seat of any of the clinical manifestations of syphilis. Gummous mastitis occurs either as a circumscribed or as a diffuse lesion. In his case, the gumma was detected eleven years after the occurrence of the primary infection. The macroscopic and microscopic observations are characteristic, although often a differential diagnosis is rendered difficult by resemblance of the tumor to other types of tumor. The author extirpated the tumor in his case and followed this removal with active antisyphilitic treatment. A complete cure and restitution of the patient's health were effected.

MEINICKE TURBIDITY REACTION IN DIAGNOSIS OF SYPHILIS. E. MEINICKE, Klin. Wchnschr. **9**:1867 (Oct. 4) 1930.

In discussing his turbidity reaction for the diagnosis of syphilis, Meinicke directs attention to the fact that instead of using extracts from the hearts of horses, as

he did formerly, he now uses extracts from beef hearts. The observations of several investigators as well as his own tests convinced him that the use of equine extracts reduces the specificity of the turbidity reaction and that beef extracts are superior. The use of equine extracts is not advisable for two reasons: first, on account of heterogenic antibodies, and second, because many patients have received injections of serum from horses.

STREAK-SHAPED GROWTH INHIBITION OF HAIR IN PATIENTS WITH ANGINA PECTORIS OR THROMBOSIS. P. NEUDA, Med. Klin. **26**:1370 (Sept. 12) 1930.

The growth inhibition of the hair of the head that Neuda noted in patients with angina pectoris, or in those who show a predisposition to thrombosis, is located behind the ear and on the occiput. This manifestation should not be confused with psilosis, for it is only a retardation of the growth. In the discussion of the pathogenesis of this symptom, the mechanisms of thallium alopecia and of syphilitic psilosis are mentioned, and likewise the psilosis of the lateral portion of the eyebrows. Special emphasis is put on the connection with gastro-intestinal disorders. Still more significant, however, appear certain hereditary influences. Investigations on the heredity of patients who show this symptom revealed diseases with an intense toxic influence on the organism, such as cancer and syphilis, and it is probable that the after-effects of this toxic influence become manifest in the offspring.

CEREBRAL MANIFESTATIONS FOLLOWING VARICELLA. E. TRAMER, Med. Klin. **26**:1598 (Oct. 24) 1930.

Tramer reports two cases of disturbances in the central nervous system after varicella. The first patient was a boy, aged 7, in whom the cerebral symptoms developed six days after the beginning of the varicella. The symptoms indicated an encephalitis which involved especially the cerebellum and the medulla oblongata. The treatment consisted in the administration of methenamine, acetylsalicylic acid and calcium. Gradually all the symptoms disappeared, and the boy recovered completely. The second patient was a girl, aged 3. In this case the cerebral symptoms likewise developed on the sixth day; however, they had the character of an acute anterior poliomyelitis. The treatment was similar to that employed in the first instance, and the child recovered.

SULPHUR THERAPY IN FURUNCULOSIS. K. HERXHEIMER, P. HAPPEL and E. UHLMANN, München. med. Wchnschr. **77**:1526 (Sept. 5) 1930.

In the sulphur therapy for furunculosis described by Herxheimer et al. the patients are placed in chambers into which, by means of compressed air, water containing sulphur is sprayed. The water employed for this treatment is obtained from natural sulphur springs, and besides sulphur it contains numerous other minerals. The authors found that the therapeutic results of this treatment were favorable in most cases. New furuncles did not develop and the existing ones healed rapidly.

MERCURY EXANTHEMS IN CHILDREN. E. JENNY, Schweiz. med. Wchnschr. **60**:942 (Oct. 4) 1930.

Jenny describes his observations on seven children in whom ingestion of an anthelmintic containing mild mercurous chloride caused fever and eruptions of the skin of the type that are noted in erythema infectiosum. In another case the same rash developed after silver amalgamate had been used for the filling of teeth. It could be demonstrated that those patients were subject to a hypersensitiveness to mercury. The author thinks that such hypersusceptibility is more frequent than is generally assumed.

Society Transactions

NEW YORK ACADEMY OF MEDICINE, SECTION OF DERMATOLOGY AND SYPHILOLOGY

A. Benson Cannon, M.D., *Secretary*

Oct. 7, 1930

Walter J. Highman, M.D., *Chairman*

Lupus Erythematosus. Presented by Dr. Herman Goodman.

Eight women and two men were presented who had been under observation at the New York Skin and Cancer Hospital. A photograph of the clinical lesions and a microscopic slide of the pathologic material were presented with the history of each case. All of the patients were white except one, a colored woman from Porto Rico. The ages were: 20, 26, 28 (two), 29, 30, 40, 43, 46 and 50. The period that the patients had noted the eruptions was: five months, seven months, one year (two), two years, four years, three years and eleven years. The sites of the eruption were: cheek, scalp, chest, arms, neck, eyelids, mucous membranes of the lips and buccal cavity.

Six of the ten patients had been treated with gold compounds, averaging 25 mg. for the initial dose, 50 mg. for three or four injections and 100 mg. thereafter. The number of injections given was: seven, eight, thirteen, nineteen, twenty-nine and fifty-four.

The clinical results showed: the complete disappearance of the lesions in one, a scar in one; marked improvement in three; improvement in one, and one patient became better after treatment for seborrheic dermatitis (gold compounds were not used).

DISCUSSION

Dr. Herman Goodman: The cases were prepared for tonight's presentation by Dr. Light of the New York Skin and Cancer Hospital.

Pemphigus Vulgaris. Presented by Dr. Charles Wolf.

M. S., a man, aged 41, born in the United States, a chauffeur, was married and had four healthy children. His past history was unimportant. He had always been in good health. He used alcohol and tobacco moderately.

His illness dated back two months. At that time he noticed some "sores" on the roof of his mouth. About a week later, he noticed blisters in both axillae. He came under Dr. Wolf's observation about a month prior to presentation. At that time he showed circumscribed ulcerations, the size of a pea, in the throat and on the gums and buccal mucosa behind the last molars of the lower jaw. He also had crusted lesions in both axillae. Isolated bullae had developed on the lower lip, behind the ears and on the nasal mucosa. Solitary bullous lesions had cropped out on the trunk and chest. No Nikolsky sign could be elicited. He said that he had not had initial or secondary lesions of syphilis, in spite of the fact that the Wassermann reaction of the blood was 4+.

A Case for Diagnosis (Psoriasis?). Presented by Dr. John H. Harris.

V. S., a man, aged 30, stated that he had had the eruption for three years; at times it seemed to improve, but it always recurred, and he had never been entirely well.

Examination showed fawn-colored, annular, somewhat keratotic lesions on the fingers, some of which were fissured and scaly, while others were verrucose. Each palm showed a circular eczematoid patch. When first seen the patient had a macerated, erythematous eruption between the toes.

On Sept. 16, 1930, the Wassermann reaction was reported negative.

DISCUSSION

DR. OSCAR LEVIN: The case impressed me as being most unique. Such a condition is rare and seldom observed at our meetings. The most characteristic lesions were circumscribed and made up of three zones. A central, slightly depressed zone, covered with thickly adherent scales, looked horny and in some places slightly atrophic. About this hyperkeratotic area, a fine, narrow groove could be discerned, separating it from the outer, elevated, dark red, rolled border. There were also some lesions that were more regular, and not so characteristic and hyperkeratotic. Several lesions suggested, but were not, those of psoriasis. For instance, on the back of the left forearm below the elbow there was a psoriasis-like lesion which did not show the characteristic scaling or bleeding points of psoriasis. The nails were unaffected. I do not think that a positive diagnosis can be made without the aid of the microscope. I wish to offer the diagnosis of porokeratosis of Mibelli.

DR. LOUIS TULIPAN: I have seen similar lesions, usually on the soles of the feet. I think that this is a case of psoriasis. We had a case in which a biopsy proved such a diagnosis. The lesion on the elbows is a typical psoriatic patch. The scales could not be removed easily.

DR. SIGMUND POLLITZER: I thought of porokeratosis at the first glance, but I rejected it on closer inspection. I have seen psoriasis produce just this kind of lesion in cases that I have been able to follow up for a number of years. This is of course an unusual manifestation of psoriasis. I have seen just that type of lesion on the palms and fingers in cases that were frankly psoriasis, with typical lesions on the scalp, trunk and extremities. Moreover, this patient has a distinctly psoriatic patch on the right elbow. I would make a diagnosis of atypical psoriasis.

DR. PAUL GROSS: Dr. Levin gave an excellent description of the lesions; as he said, there are patches with a red border, adherent scales and some atrophy. In the places in which there was not so much hyperkeratosis, the central atrophy was distinct, and judging by these manifestations the diagnosis of lupus erythematosus is not out of place.

DR. ISADORE ROSEN: The clinical diagnosis of this case is either lichen planus hypertrophicus or psoriasis. I have seen a number of cases with similar involvement in which a diagnosis of dermatophytosis has been made because of the association of a fungous infection of the toes. The latter was merely a concomitant observation, as longer observation proved these cases to be either psoriasis or hypertrophic lichen planus.

DR. JOSEPH J. ELLER: When I first saw this case I had no diagnosis in mind, but I think Dr. Rosen's suggestion of lichen planus a good one.

URTICARIA PIGMENTOSA. Presented by DR. ELIAS W. ABRAMOWITZ.

F. B., a woman, aged 48, married, who was born in Austria, first called at the Post-Graduate Hospital Skin Clinic on Sept. 10, 1930. She stated that she had always enjoyed good health and that there was no history of diseases of the skin in the family.

The patient presented a diffuse macular eruption, extending from the sides of the neck down to the ankles, varying from red to light brown. After brisk rubbing some of the lesions had a tendency to be papular, while others gave forth an urticarial lesion. Some spots had apparently involuted and left areas of brownish pigmentation.

The biopsy report confirmed the diagnosis (mast cells were present). The Wassermann reaction was negative. Examination of the blood showed cholesterin, 168; sugar, 0.101, and lecithin, 247. Urinalysis gave negative results.

DISCUSSION

DR. ELIAS W. ABRAMOWITZ: I do not recall seeing so many mast cells in an acquired type of this disease as the sections from the skin of this patient showed.

LICHEN PLANUS. Presented by DR. SAMUEL FELDMAN.

M. F., a housewife, aged 28, came to the Bronx hospital for treatment about Sept. 1, 1930. She said that about four years prior to her appearance at the clinic, she had been exposed to the sun and had received a moderately severe burn. After the burn had practically healed, some regions of the skin began to itch anew, and an eruption appeared on the ankles and the shoulders. The eruption gradually extended to the thighs, but there it apparently became arrested and remained the same until several days prior to her visit, when she contracted a cold with high fever. At that time fresh lesions appeared on the abdomen, and the eruption in the previously involved areas became more intense.

Examination revealed an eruption covering practically the whole body, except the head, the face, the hands and that portion of the chest, back and shoulders that had been covered by a bathing suit during the summer. On casual examination, the eruption on the upper portion of the body bore a strong resemblance to pityriasis rosea. There were erythematous areas, many of which had a central scale. The characteristic papule of lichen planus had been masked by the erythema. In time, however, the lesions became more typical.

DISCUSSION

DR. ELIAS W. ABRAMOWITZ: Exposure to the sun caused the lesions to locate themselves on the exposed parts, and an attack of fever evidently caused an exaggeration of the old lesions and the eruption of new ones on parts of the body previously uninvolved and not exposed to the sun's rays.

DR. SAMUEL FELDMAN: It was interesting to note that where the patient had worn a bathing suit, there were practically no lesions. She is intelligent, and the history can be depended on. About four weeks after she had acquired the sunburn, she had an illness with fever, and a second crop of lesions had appeared on the abdomen and other places in which the eruption was formerly absent.

During the previous summer, I saw three similar cases of lichen planus, appearing only in areas of sunburn. The question is, do the ultraviolet rays or the heat bring on the attack? The fact that this patient had a second attack after fever, the eruption involving hitherto clear areas, would make one consider the question of heat as well as that of ultraviolet light.

MYCOSIS FUNGOIDES. Presented by DR. EUGENE TRAUB.

A Jewish widow, aged 36, had been previously presented before the Atlantic Dermatological Conference in December, 1929. The diagnosis at that time was chronic eczema. Since then she had been hospitalized four times.

On the first admission, appendectomy had been performed and a fibroma had been removed from the tongue. The gallbladder was studied and was considered normal.

On the second admission, urinalysis gave negative results, and there was slight to moderate leukocytosis and eosinophilia (from 20 to 30 per cent). Chemical analysis of the blood gave normal results. The Wassermann reaction was negative. The urine contained 0.04 mg. of arsenic per hundred grams of dry specimen and 2.08 per cent solids. Correlated observations crystallized a diagnosis of acute cholecystitis. The patient was treated medically.

On the third admission, urinalysis showed that the urine was normal; there was no alteration in the previous blood picture (determined by weekly examination of the blood). The basal metabolic rate was +20. The microscopic diagnosis was mycosis fungoides. Treatment included roentgen therapy, sodium thiosulphate and topical remedies.

On the fourth admission, the day following the preceding dismissal, slight facial exposure to the sun's rays had precipitated extensive weeping of the skin after several hours. There were marked erythema and moderate edema of the face, malaise, headache and weakness. No essential changes were found in the laboratory observations. The condition of the skin returned to its usual state after several days' rest in bed, with soothing local applications.

DISCUSSION

DR. WALTER J. HIGHMAN: The histologic specimens substantiate the point of view as well as the outstanding clinical features.

DR. EUGENE TRAUB: This case is particularly interesting because we have been able to follow it for so long. When first presented it was with the view of ruling out a possible mycosis or lymphoblastoma of the skin and also to obtain therapeutic suggestions. The patient failed to respond at any time to roentgen therapy, and she has been examined unusually carefully for any possible cause of the eruption. It was not considered that the eczema was a cutaneous process, but merely a manifestation of an internal derangement. She has had the appendix, the tonsils and several diseased teeth removed, and she has been examined carefully for disease of the gallbladder. She had one attack of jaundice. Another attack referable to the gallbladder without jaundice has been investigated. No treatment has had any material influence on the eruption. A peculiar thing about the eruption is that when the patient is in the hospital it improves; when she has been home for one or two days, she has a severe outbreak and has to return. Occasionally these flare-ups occur in the hospital, and there is a suggestion that they may be due to nervousness.

DR. PAUL GROSS: After the last remark of the presenter, I believe that the discussion should return to the reason for the diagnosis of mycosis fungoides. The history of rapid and marked improvement when the patient is in the hospital and the recurrence when at home favors the diagnosis of eczema.

DR. EUGENE F. TRAUB: I presented the patient at the November, 1929, meeting of the Atlantic Dermatological Conference with a diagnosis of chronic eczema. I have been rather reluctant to change this diagnosis. We have done everything I know of to rule out the causes of this condition. The gallbladder has not been removed. It is a question whether this should be done. I have not been able to find anything in her home that could cause the eruption. The skin has never been well enough to afford satisfactory areas for tests. It seems to make little difference whether the patient goes home or to the country. Her relatives believe that the eruption is due to the fact that she is exceedingly nervous and easily upset. There may be a neurotic element.

The application that gave us the best results was sulphonated bitumen in a petrolatum base. Wool fat did not cause any improvement. She has had baths in water to which starch and sodium bicarbonate have been added, as well as baths in plain water.

SCLERODERMA CIRCUMSCRIPTUM. Presented by DR. LOUIS CHARGIN.

L. P., a man, aged 46, married, a tailor, noticed the eruption accidentally about two years prior to presentation. It had first appeared on the back, and since then had spread to the left arm and the right suprascapular region. Examination showed an eruption which was most marked on the left aspect of the upper part of the back and the outer aspect of the left arm, reaching down to about the middle of the forearm. There were two fairly large patches over the right shoulder.

All of the affected skin was ivory white, showing slight wrinkling, and the follicular openings seemed enlarged. The patches were irregularly round and varied in size from that of a five cent piece to patches 4 inches (10.16 cm.) in diameter. The smaller lesions showed a faint reddish border, and some of the patches were pigmented. The skin did not feel hard, but rather rough and firm. There was no scaling, and subjective symptoms were absent. The pathology of an excised piece of tissue suggested scleroderma.

DISCUSSION

DR. ADOLPH ROSTENBERG: I should be inclined to call this case lichen sclerosus because of the patulous follicles, which are marked and are characteristic of this variety of lichen.

DR. LOUIS CHARGIN: My case does not fit into the picture of the disease mentioned by Dr. Rostenberg. In lichen albus or lichen sclerosus the eruption consists of lesions varying in size from that of a pinhead to that of a millet seed, isolated or in groups which are inflammatory at the outset. There is no such history in this case. Moreover, the pathology strongly suggests scleroderma.

A CASE FOR DIAGNOSIS (VITILIGO?). Presented by DR. PAUL GROSS.

G. I. B., a colored girl, aged 3 years, had first been seen at the Vanderbilt Clinic on Sept. 17, 1930. The skin around the mouth, arms and thighs had lost color in the last six months. Examination showed a completely depigmented area about 2.5 cm. in width around the mouth. The border was serpiginous, reddish, slightly raised and scaly. There were spots of slight depigmentation on the arms and posterior surfaces of the thighs. On September 17 and 24 and October 1, microscopic examination and cultures taken from the skin and mouth as well as one examination of the stools, were negative for fungi, with the exception of a *Penicillium* from the lesion of the mouth. The Wassermann and Kahn tests gave negative results.

A diagnosis of vitiligo or a fungous infection resulting in depigmentation was considered.

DISCUSSION

DR. GEORGE C. ANDREWS: Six months before presentation a depigmented patch developed around the mouth of the patient. At the edge of the patch there was a definite, erythematous, vesicular border, slightly elevated and crusted. Examinations made for *Monilia* and other fungi gave negative results. The patient also had questionable depigmentation of the hands.

DR. HERMAN FEIT: Was adhesive plaster applied about the mouth? This case reminded me of one I saw several years ago. Adhesive plaster had been applied to the child's mouth to keep it quiet, which was followed by depigmentation like that seen in the patient presented. It looks like artificial dermatitis.

DR. PAUL GROSS: Repeated examinations for fungi and cultures gave negative results, and still the condition creates the impression of being mycotic. There is one interpretation; i. e., that the depigmentation is true vitiligo, the border of which has been sensitized to different irritants.

LUPUS ERYTHEMATOSUS. Presented by DR. ISADORE ROSEN.

U. B., a man, aged 35, was previously presented before the Brooklyn Dermatological Society, at the September, 1930, meeting. He had a typical case of lupus erythematosus which had been precipitated by exposure to the sun.

DISCUSSION

DR. ELIAS W. ABRAMOWITZ: This patient presented a classic picture of lupus erythematosus; the microscopic picture of an excised lesion was also typical for that disease. It is probable that an irritant, be it sunlight, heat or a chemical

(the patient also applied vinegar), may be responsible not only for the onset of the eruption, but for its location. Excessive irritation in the mouth may probably cause the lesions to appear there also.

DR. LOUIS CHARGIN: The observation mentioned by Dr. Rosen that lupus erythematosus is at times precipitated by exposure to sunlight is, of course, well known. The type of lupus erythematosus that sunlight precipitates is not the fixed variety, but is usually a superficial type that affects the face, the upper part of the chest and the hands. The clinical picture is sharply outlined erythema and some scaling; the resulting atrophy is not marked.

DR. PAUL GROSS: Galewsky discussed the subject a few years ago in an article concerning treatment with gold compounds. He distinguished three types of lupus erythematosus: (1) tuberculous, (2) nontuberculous and (3) a sun type. One could add the following type: There is a certain type of lupus erythematosus that seems to have no other etiology but sensitization to sunlight. Recently, I saw a patient with small lesions of lupus erythematosus who was treated with many injections of gold compounds without result. After the application of an ointment, containing quinine, for protection against the ultraviolet rays, the lesions disappeared within a week. On the other hand, any type of lupus erythematosus may be provoked or exacerbated by exposure to the sun or by treatment with ultraviolet light. Whether or not in the so-called sun type a toxin produced by a focal infection is the photosensitizing agent, we cannot tell at present.

DR. LOUIS TULIPAN: I thought that it would be interesting to examine the urine for hematoporphyrin in these cases, owing to the sensitivity to sunlight, but I could not find it in any case.

DR. HERMAN GOODMAN: Sunlight has been proposed before as a cause for lupus erythematosus. King Smith had a series of patients in whom sunburn took first place as a possible cause of the eruption of lupus erythematosus. Other causes presented were burns from hot water, the use of hot oil, radium, etc. Dr. Fred Wise presented a patient with lupus erythematosus following exposure to radiation from artificial sources of ultraviolet light.

Although 50,000,000 people are exposed to the rays of the sun and ultraviolet radiation, lupus erythematosus remains a fairly rare disease of the skin—certainly its incidence does not reach that of the first 10 diseases listed according to prevalence.

The type of lupus erythematosus to which Dr. Chargin and Dr. Gross refer is the type apparently caused by exposure to sunlight. A patient falls asleep on the beach at noon in summer and then goes home with a severe sunburn, which, instead of gradually disappearing as a normal sunburn should, gives place to an acute, superficial, widespread eruption of disseminated lupus erythematosus. According to my own observations and the reports in the literature, the eruption usually develops in young women.

This winter I hope to subject the skin of our patients with lupus erythematosus to various ranges of filtered ultraviolet radiation in an attempt to learn which zone is responsible for this effect on the skin. It is possible to filter artificial sources of ultraviolet radiation and to secure radiation with qualitative limits similar to those of sunlight.

DR. A. BENSON CANNON: I do not think that one type of lupus erythematosus is more susceptible to sunlight than another, nor do I believe that sunlight is apt to produce generalized lupus erythematosus more quickly than would any other chemical or nonchemical irritant. I have treated a great many patients with lupus erythematosus with ultraviolet radiation, and I have noticed that when the patients were burned, almost invariably an extensive lupus erythematosus developed, sometimes quite marked, extending to the hands from a chronic discoid type involving the face.

Solutions of gold compounds, especially when given in large doses, will cause an acute outbreak of lupus erythematosus. I think that this is true of other chemical irritants.

DR. JOSEPH J. ELLER: I might also mention some experiences to bear out Dr. Cannon's remarks. The patient of Dr. Wise whom Dr. Goodman mentioned had lupus erythematosus of the bat wing type and enlarged glands in the neck on each side. We gave the patient filtered roentgen rays on the neck. Shortly after the treatment, over the area on each side of the neck that had been exposed to the roentgen rays, the patient had a typical eruption of lupus erythematosus. Ultraviolet rays may also cause an extension of the eruption. In the past two years I have had two cases of lupus erythematosus of the fixed type which became disseminated over the whole body and extremities following injections of 50 mg. of a gold compound and sodium thiosulphate.

DR. ISADORE ROSEN: I presented this patient, not because the case is an unusual type of lupus erythematosus, but because of the history of severe sunburn previous to the onset of the disease. I emphasize this fact, because a large percentage of patients with lupus erythematosus give such a history. In view of the fact that so many people deliberately expose their bodies to the actinic rays during the summer, I think that it would be well to caution the public of the dangers of such indiscriminate exposure to the sun.

LEUKOPLAKIA OF GLANS PENIS (?). Presented by DR. JOHN H. HARRIS.

A man, aged 42, stated that he had had the condition for five years. There had never been any subjective symptoms. He had never had extramarital relations. In the spring of 1930, the Wassermann reaction was reported negative.

On presentation, a whitish, keratotic, infiltrated, circular lesion, 1 cm. in diameter, was observed surrounding the meatus.

DISCUSSION

DR. GEORGE C. ANDREWS: The lesion is not characteristic of leukoplakia, but appears rather to be fibrosis, covered by normal but thin epidermis. I have seen similar lesions after a meatomy has been performed. I do not consider the lesion dangerous or of particular significance and would advise leaving it alone.

DR. ISADORE ROSEN: The clinical appearance reminds me of one of two things, namely, kraurosis of the penis or possibly scleroderma.

DR. PAUL GROSS: I agree with Dr. Rosen's suggestion of kraurosis of the glans penis.

DR. HERMAN SHARLIT: The patient told me that at one time he had had an ulceration on the surface of the penis over this area. To me it appears to be nothing but a scar, and I think that it is the result of a chemical burn.

DR. JOHN H. HARRIS: I do not think that the condition suggests scar formation. The epithelial layer is perfectly smooth over the entire area. I think that it might possibly be scleroderma.

A CASE FOR DIAGNOSIS (EPITHELIOMA?). Presented by DR. JOHN H. HARRIS.

A woman, aged 57, had first been seen in July, 1930, at the Broad Street Hospital, at which time she stated that, beginning a year previous to presentation, she had noted a small red swelling on the right side of the nose which progressively became larger. At no time did she experience pain.

On presentation, there was a tumor mass on the right side of the nose, the size of a hazelnut, elevated, firm and slightly violaceous, with a smooth surface.

Wassermann tests performed by the laboratory of the Board of Health and by that of the Broad Street Hospital gave negative results. A provocative Wassermann reaction was also negative, as was the therapeutic test.

On October 1, the Kline precipitation test gave negative results. Two one-half erythema doses of roentgen rays were given on July 16, and failed to effect any improvement.

DISCUSSION

DR. SIGMUND POLLITZER: Is there any mention of the lesion becoming smaller?

DR. WALTER J. HIGHMAN: The history states that the condition began a year before presentation and increased to the present size.

DR. SIGMUND POLLITZER: I understand that the patient had the eruption a couple of years ago, and that it then subsided and subsequently recurred.

DR. LOUIS TULIPAN: The patient gave a history of having had the eruption for five years. She was operated on twice and had had one roentgen treatment, and the condition recurred each time.

DR. SIGMUND POLLITZER: My suggestion is sarcoma.

DR. GEORGE WYETH: This is a case for biopsy, and I am of the opinion that biopsy will prove the lesion to be an adenoid cystic epithelioma, which is a first cousin to basal cell epithelioma. It distinguishes itself, however, by having more bulky lesions that are not prone to break down or ulcerate. It is generally radiosensitive, but like all radiosensitive tumors is apt to recur. On questioning the patient, I found that this is the third time that it has recurred in five years, after two attempts at removal. In consideration of its location, appearance and behavior, I would risk a diagnosis of adenoid cystic epithelioma.

DR. GEORGE C. ANDREWS: I would confirm Dr. Wyeth's opinion that the lesion in this case is an adenoid cystic epithelioma. It certainly has the appearance of such a lesion, and it is in a common location for this type of epithelioma, which is entirely distinct from the type described by Brooke.

DR. WALTER J. HIGHMAN: In what sense do you use the term adenoid cystic epithelioma—as a malignant growth?

DR. GEORGE C. ANDREWS: I use the term in the sense of a relatively benign growth. These lesions are fully described by Dr. Ewing in his book on neoplastic diseases.

DR. EUGENE TRAUB: I got the same history of the long duration of five years with recurrence after removal, and it is my impression that the lesion is a squamous cell epithelioma. It may have started as some other type of epithelioma, but from its invasive and somewhat cystlike appearance I think that it will prove to be of the squamous cell type.

There is a type of squamous cell nodule that develops on the skin and is definite and characteristic. It is rather hard, firm and red, with marked telangiectasis, obviously an epithelioma; on microscopic examination it invariably proves to be a squamous cell rather than a basal cell lesion. The fact that the lesion recurs does not necessarily give a clue to its type, as, of course, any type may recur.

DR. A. BENSON CANNON: I do not think that it is possible to make a definite diagnosis of a lesion of this kind without microscopic examination. You may think of sarcoma or epithelioma. Recently, in two instances I have been surprised on removing a growth similar to this one—seen in both instances by a number of dermatologists who agreed that it was an epithelioma—to find that the diagnosis was finally that of lymphoblastoma. In view of my two cases, and especially with the clinical picture presented, i. e., a soft, red tumor, I should depend on microscopic rather than on clinical diagnosis.

DR. WALTER J. HIGHMAN: I was hoping that the discussion would take the form it did, for clinically, it is impossible to make an accurate diagnosis of the nature of tumors. I recall an unusual case of multiple sarcomatosis that I saw. The lesions had all the clinical earmarks of sarcoma, and on removal they proved to be sebaceous cysts. I do not think that any one, unaided, should express an opinion here.

A CASE FOR DIAGNOSIS (ECZEMA?). Presented by DR. LEWIS B. ROBINSON.

A. C., a colored housewife, aged 53, had first been seen at the Presbyterian Hospital three and one-half years prior to presentation, at which time she com-

plained of an intermittent eruption on the face of six months' duration. The patient had first noted pricking, itching and burning sensations over the flushed area on either cheek, and in a few hours the cheeks had become swollen, erythematous and covered with minute blisters. These areas became crusted over, and in about a week the face was again clear.

The attacks occurred about twice a month, and the duration lessened until they lasted only about from twenty-four to forty-eight hours. The symptoms were greatly aggravated on exposure to the air and were usually worse in summer than in winter; during the past summer, the face had become deeply pigmented.

On examination three and one-half years previously, the color of the skin on the face was found to be brown like that on the rest of the body. The cheeks were erythematous and covered with a fine desquamation. The chin was covered with minute vesicles on an erythematous base. Since that time the eruption had occurred as noted, and in addition the face had become deeply pigmented.

General examination gave negative results.

Roentgenograms of the sinuses, teeth and gallbladder were negative. The Wassermann reaction was negative. The basal metabolic rate was —14 per cent. Routine patch, scratch and intradermal tests (including tests for cosmetics and ultraviolet radiation) gave negative results, with the exception of the reaction to staphylococcus toxin.

DISCUSSION

DR. SIGMUND POLLITZER: The history of the case and the course of the eruption are characteristic of a sensitization dermatosis, a so-called allergic disturbance. It is up to Dr. Robinson to determine its possible cause.

DR. WALTER J. HIGHMAN: The tests done to determine the cause gave inconclusive or negative results.

DR. ELIAS W. ABRAMOWITZ: No diagnosis can now be made definitely. Several possibilities present themselves. The patient used drops for her eyes during an entire summer about two years before presentation; therefore, the possibility of argyria has to be considered. About that time she suffered from jaundice; hence the possibility of pigmentation of the skin from an hepatic disorder must be considered. Or she may have a pigmentation from a repeated dermatitis of obscure cause. She is a colored woman, and Negroes are susceptible to pigmentation. Her gums below the lower central incisors are also pigmented.

DR. HERMAN GOODMAN: At first glance, from a distance, I suspected leprosy, because of the brightness of the coloration — its superficial shininess. On the basis of the history and the periodic appearance of a vesicular dermatitis, such a diagnosis is not tenable. We have learned that on exposed surfaces many substances produce pigmentation due to the action of sunlight, such as dermatitis due to perfume. I agree with Dr. Pollitzer that in this case the thing to do is to determine which substance is used periodically, and the use of which is followed by the vesicular eruption.

Dr. Highman reported the case of a patient whose dermatitis was caused by the perfume his wife used. Good detective work is needed in this case.

DR. GEORGE C. ANDREWS: I believe that the pigmentation on this patient's face has resulted from roentgen treatment. She had three treatments with fractional roentgen rays, and not infrequently in brunettes this is sufficient to produce intense pigmentation of the exposed areas.

DR. SIGMUND POLLITZER: The patient has had this disease for eight months or a year, and every week or two edema of the cheeks appears, with tingling and burning, followed generally by a vesicular eruption which subsides in a few days. After a brief period it develops again. To my mind, it is a perfectly clear case of hypersensitization, caused by something the patient does. It is most likely caused by some foodstuff or drug. I am reminded of a case I saw some time ago, in which the eyelids were affected. After a period of observation, I concluded that the disease was due to something I had never heard of, namely, psyllium seeds, which the patient occasionally took as a laxative. The discovery

of the cause in these cases is usually a matter of detective work. I told the patient what I was trying to determine and enlisted her aid. She came to me after a time and said that she had noticed twice that the eruption appeared after she had taken psyllium seeds the night before. After the eruption subsided we proved the case by giving her a dose of psyllium seeds; the reaction promptly occurred. I think that the case presented is of a similar nature.

DR. GEORGE C. ANDREWS: I thought that the patient was presented on account of the pigmentation, which was the most interesting feature. I have not seen the erythematous, edematous eruption mentioned in the history, and I doubt whether it is possible to establish the cause of the condition without seeing it.

DR. PAUL GROSS: There is no doubt about the presence of dermatitis as suggested by Dr. Pollitzer, but I think that the pigmentation is out of proportion and also that it extends beyond the areas affected by dermatitis. The discoloration is a peculiar grayish-brown and is mottled, and the skin appears slightly rough. These characteristics fit in well with the picture of melanodermatitis toxica (Erich Hoffman), which is identical with the melanosis of Riehl. On account of the dermatitis, the patient has apparently used different ointments and cold creams, probably some of which were made up with a base of poor quality, containing traces of acridine. Biopsy would be valuable in confirming the diagnosis.

DR. SIGMUND POLLITZER: The pigmentation has been unduly dwelt on. Here is a colored woman who every fortnight gets a dermatitis on the cheek. That that cheek should become pigmented in the course of time seems to me nothing to marvel at.

DR. JOSEPH J. ELLER: In regard to the diagnosis of a possible dermatitis and pigmentation due to cosmetics, I think that the negative reactions to the tests mean little, for it is possible for persons to have local sensitivity. In order adequately to test the patient, the various cosmetic powders and applications to the hair ought to be applied locally to the face and not to the arms.

ECZEMA. Presented by DR. GEORGE C. ANDREWS.

A. L., a German housewife, aged 36, was admitted to the Vanderbilt Clinic on Sept. 29, 1930, with a history of an eruption of the feet, hands and scalp of six months' duration. On examination of the palms and soles, a thickened, hypertrophic, fissured, gyrate eruption was found. Hyperkeratotic areas at the tips of the fingers were also present, and the scalp showed fine white desquamation. On the right arm, at the sites of linear scratch marks, there was a fine scaly eruption. Examination for tinea gave negative results.

DISCUSSION

DR. BOLESLAW LAPOWSKI: Flat papules of lichen planus shine through the mucous membrane of the lower lip. The other lesions on the body are hypertrophied lichen planus. Under treatment with hot oil and salicylic acid plaster the hypertrophic lesions can be improved greatly without roentgen therapy.

DR. MAX SCHEER: Very little stress has been laid on the lesions on the dorsal surface of the hands. I think that these are typical papules of lichen planus.

DR. ADOLPH ROSTENBERG: The patient has characteristic lesions of lichen planus on the dorsal aspects of both feet. The keratotic lesions might be classified as a hyperkeratotic type of lichen planus.

DR. LOUIS CHARGIN: I agree with the diagnosis of lichen planus on the legs and dorsa of the hands and feet. I cannot, however, say the same for the vegetative condition of the soles and palms. In the first place, lichen planus of the soles and palms is not so common; secondly, such a keratotic condition would be unusual for lichen planus.

DR. GEORGE C. ANDREWS: I have not seen the patient for four days, and during that interval the appearance has changed considerably. Linear lesions

have appeared on the forearms, which consist of flat, angular papules. I have not seen the lesions of the mouth, and those mentioned on the scalp have been nothing more than fine dandruff. The objection to lichen planus as a diagnosis is that such extensive verrucous changes could scarcely be caused by that disease in such a short time. The lesions on the palms are of three months', and those on the soles of six months' duration.

The rapid development of the eruption in symmetrical locations suggested the possibility of an internal disorder as its cause. I therefore suggested the diagnosis of eczema until something more definite was found. A gonococcus complement fixation test, a determination of the arsenic content of the blood and a biopsy are being made.

A Case for Diagnosis (Psoriasis?). Presented by Dr. Henry D. Niles.

M. W., a white man, aged 47, born in Scotland, a printer, presented himself at the Cornell Clinic on Oct. 1, 1930, with an eruption that had begun suddenly three months previously with itchy, thick, red skin on the palms and the wrist. The backs of the hands and arms were also affected. The hands had improved while the patient was away from New York, but the feet had become similarly involved ten days later. The hands and feet improved, but had become worse three weeks prior to presentation, at which time the thighs had first become affected. Olive oil was the only treatment that had been applied.

The patient stated that he worked with dyes and potash. His general health had been good, and he was taking no drugs. At the time of admission, he presented several small, red papules with silvery scales on the knees and shins, and red, scaly patches of dry skin on the inner side of the thighs. The skin of the palms and soles was red, thick and fissured, and the nails were distorted and discolored.

A biopsy had been taken from a lesion on the left thigh. The microscopic picture was not specific. No fungi were found in the scales from the lesions on the thighs.

Urinalysis was negative, except for a slight trace of albumin, mucous shreds and cylindric cells. The Wassermann reaction was negative. The blood sugar was 125 mg., and urea nitrogen, 9.3 mg. per hundred cubic centimeters.

The patient had been given 5 per cent carboneal ointment, and when seen five days later showed considerable improvement, especially on the arms. He was given 1 Gm. of sodium thiosulphate intravenously.

DISCUSSION

Dr. Henry D. Niles: There is a question of an occupational dermatosis. The patient gave a history of the eruption having healed when he stopped work and having reappeared in June when he resumed work. There were some lesions on the shins that were typical of psoriasis.

Dr. Walter J. Highman: I think that some of the lesions on the extremities have a striking resemblance to psoriasis.

Dr. Sigmund Pollitzer: If the process were limited to the palms, one would certainly be justified in at least a tentative conclusion that it was a dermatitis connected with the patient's occupation. That he is a printer is true, but he is not a printer who works with type. He works with silk fabrics and uses dyestuffs. It is possible that the dyestuff produced the lesion on the palms, but that would not account for the lesions on the soles, unless there were a systemic effect due to absorption with a special tropism. I was interested in hearing about the lesions on the legs and arms. I did not happen to see them. If they have any resemblance to psoriasis, I should say that that is the most likely diagnosis of the palmar and plantar lesions.

A great many dyes are arsenical compounds, and arsenic is not to be rejected as a causative factor without further study.

DR. JOSEPH J. ELLER: Has the presenter ruled out salicylates as a possible cause? Two years ago I saw a case in which the patient had repeated eruptions of this kind on the palms and soles as a result of taking salicylates. I think that the color of the lesions in this case is against the diagnosis of psoriasis.

DR. H. D. NILES: I went into the history of the drugs; as far as could be elicited, the patient had taken none. I thought of an arsenical keratosis. The patient had had no injections and had not taken drugs by mouth.

SARCOID OF BOECK (?). Presented by DR. PAUL GROSS.

L. M., a man, aged 73, had been admitted to the Vanderbilt Clinic on Aug. 19, 1930, seven weeks prior to presentation, with a history of an itching eruption on the left side of the forehead of one and a half years' duration. The patient stated that he had been injured over this area fourteen years previously.

On examination of the left frontal and temporal regions, a rather well circumscribed, erythematous, infiltrated area about 8 by 3 cm. was found. Surmounting this were discrete and confluent, irregular, flat, red papules. Peripherally, there were about twelve similar discrete papules.

Two Wassermann and Kahn tests gave negative results. A biopsy of a discrete papule on the left side of the forehead showed atrophic epithelium, and a corium infiltrated by numerous plasma and polymorphonuclear cells. Epithelioid cells were arranged in small collections, particularly about the blood vessels. Some of the vessels showed a moderate thickening of the walls. The histologic changes extended from the papillary layer well into the reticular layer. The collagen fibers were thin and for the most part displaced by the infiltrating cells. The section suggested sarcoid. The large number of polymorphonuclear and plasma cells somewhat confused the picture.

The patient had received a small amount of "mixed treatment," and the lesions had regressed slightly.

ACRODERMATITIS CONTINUÉS D'HALLOPEAU. Presented by DR. J. GARDNER HOPKINS.

M. L., a woman, aged 50, was admitted to the Vanderbilt Clinic on March 21, 1930, with a history of a recurrent disease of the left thumb for nine years and of the left great toe for two weeks. At that time the entire thumb and toe were covered with an erythematous, moist, macerated, reddish-yellow, exuding crust. The thumb was atrophic, and the nail was absent. Cultures for bacteria and fungi showed staphylococci and streptococci.

Routine patch, scratch and intradermal tests gave negative results, except for the reaction to the bacterial tests. The patient gave positive intradermal reactions to a stock extract and toxin of staphylococcus and to a 1:1,000 suspension of autogenous staphylococci and streptococci.

Roentgenograms of the hands and feet were negative.

For two months the patient was treated with local applications of ammoniated mercury and autovaccine combined with staphylococcus toxin. During that time there was a definite improvement in the condition of the thumb. The patient was then admitted to the Presbyterian Hospital for seven weeks. On admission, the thumb was found to be erythematous, with a group of indolent, suppurative, superficial pustules. The great toe was erythematous, swollen and tender, with a moderate paronychia from which a thin yellow fluid could be expressed. Surrounding this were a few pustules similar to the ones on the thumb. During this time the administration of vaccine had been continued, wet dressings and poultices had been applied locally, and finally one unfiltered skin unit dose of roentgen rays had been given.

At the time of discharge from the hospital, the thumb was practically well, but the paronychia persisted about the toe. Since that time the patient had been observed in the clinic, and the toe had entirely healed, but one or two minute pustules kept appearing on the thumb.

ERYTHEMA MULTIFORME GESTATIONIS. Presented by DR. PAUL GROSS.

B. M., a white woman, aged 33, American, had been seen at the Vanderbilt Clinic on Aug. 25, 1930, with a generalized eruption of ten days' duration. The condition was very itchy. The patient was in the third month of pregnancy. The history revealed that in September, 1928, the patient had been seen in the clinic, and at that time she presented a generalized eruption of three months' duration and was in the sixth month of pregnancy. The eruption was apparently of the same nature as that for which she was presented and had persisted until about one month after the delivery of a normal, healthy child. During two previous pregnancies the patient had felt well and had not had an eruption. At the beginning of the third pregnancy she had taken a few pills and a few grains of quinine.

On examination on Aug. 25, 1930, the eruption was found to consist largely of vesicles on an erythematous base, with a definite tendency toward grouping. There were numerous gyrate, erythematous, urticarial patches especially on the back. On the day of presentation most of the vesicular lesions had disappeared, and the eruption consisted of large areas with gyrate, erythematous borders which were somewhat elevated and covered with excoriations, in the central portion of the lesions the skin was normal but pigmented. The pruritus was considerably lessened. Laboratory tests revealed a negative Wassermann reaction and normal amounts of chloride, urea, uric acid and sugar in the blood. The basal metabolism was normal (+ 3 per cent).

LYMPHATIC LEUKEMIA. Presented by DR. ADOLPH ROSTENBERG.

The patient was presented before this section in May, 1930. The case was diagnosed as "melanoma," and it responded well to roentgen treatment. The patient was shown six weeks later with a diffuse hemorrhagic eruption. The blood picture at this time was normal, and there were no changes pointing to disturbance of the blood. The hemorrhagic eruption became more and more profuse. The patient was admitted to the Sydenham Hospital, and an examination of the blood revealed a picture of lymphatic leukemia. The patient rapidly succumbed to the disease. The interesting feature in this case was the original large, solitary tumor simulating a melanoma, which responded promptly to roentgen treatment. Autopsy confirmed the diagnosis.

NEW YORK DERMATOLOGICAL SOCIETY

J. FRANK FRASER, M.D., *Secretary*

Regular Meeting, Oct. 28, 1930

JEROME KINGSBURY, M.D., *President, in the Chair*

GRANULOMA ANNULARE (?). Presented by DR. FRED WISE.

Miss H. S., aged 20, was first seen at the skin clinic of the Broad Street Hospital, service of Dr. John Harris, in June, 1930. She stated that the lesion on the hand had been present for about three years, during which period she had noticed little change. She said that the condition began as a small elevated "pimple," which gradually developed into the lesion shown. Examination showed two segmented circinate lesions, each approximately 0.5 cm. in diameter. The segment consisted of infiltrated papules, somewhat shiny and waxlike. Twelve roentgen treatments of one-quarter erythema dose each had failed to effect any resolution. The Wassermann reaction was negative. The patient had refused consent to a biopsy.

DISCUSSION

There was a general agreement with the diagnosis.

DR. EDWARD R. MALONEY: The lesions are small discrete papules in an annular arrangement but not in a complete ring. A microscopic examination might show the lesions to be sarcoids. In the absence of such examination, however, I think that the diagnosis of granuloma annulare is a good one.

DR. WALTER J. HIGHMAN: It seems to be granuloma annulare; I would rule out lichen planus.

FAVUS OF THE SCALP CURED WITH ROENTGEN RAYS. Presented by DR. FRED WISE.

Mrs. E. T., aged 19, from the skin clinic of the New York Post-Graduate Hospital, first noticed a scaling of the scalp in both parietal areas two years prior to presentation. The scaling became a heavy yellow crust. Examination of the crust revealed *Achorion schoenleinii*. The entire scalp was diplated six weeks prior to presentation, resulting in the appearance of the scalp as shown. On each parietal area was a flat, reddish, violaceous, smooth, glistening area with sharply defined margins, representing the regions formerly affected by the favus. The hair on the noninfected areas was growing rapidly, but there was only a faint indication of new hair growth on the parietal portion of the scalp.

PITYRIASIS ROSEA (?). Presented by DR. FRED WISE.

A. G., a boy, aged 8, from the skin clinic of the New York Post-Graduate Hospital, presented a more or less generalized eruption, most marked on the face, upper extremities, thighs, trunk and genitals. The lesions were both discrete and confluent, erythematous, infiltrated and covered with fairly adherent, dry, large scales. Several of the lesions had apparently involuted, leaving some pigmentation. Between the lesions were areas of normal skin. There were no scratch marks present. Scraping off of the scale left bleeding points. The lesions on the face were impetiginous.

DISCUSSION

There was general agreement with the diagnosis of pityriasis rosea.

SYMMETRICAL SCARRING ON AN INFANT. Presented by DR. HANS SCHWARTZ.

A boy, aged 5 weeks, born at the Lying-In Hospital, presented at the time of birth extensive symmetrical scars on the front and sides of the abdomen and on the hips. On both flanks were symmetrical, superficial, ulcerated areas which had become completely covered with epithelium.

DISCUSSION

DR. HENRY H. WHITEHOUSE: I believe that the scarring is the result of some intra-uterine condition, resulting from traumatism or constriction.

DR. HANS SCHWARTZ: The case was presented on account of the extensive symmetrical scarring found at birth and evidently due to a destructive process occurring during intra-uterine life. No reference to a similar condition has been found in the literature, and its cause is unknown to me. Possibly the pathogenesis may be the same as that suggested by Streeter in connection with intra-uterine amputations, namely, that the process consists primarily of a mesenchymal necrosis, the active stage of the phenomenon taking place about the middle of pregnancy.

SEVERE PAIN FOLLOWING HERPES ZOSTER FOR FIVE YEARS. Presented by DR. HOWARD FOX.

Mrs. E. B., aged 64, suffered from a severe attack of zoster, involving the right side of the forehead, right eye and right frontal and parietal regions of

the scalp, five years prior to presentation. The eruption lasted for one month before all of the crusts had fallen. Since then she had suffered continuously from pain and excessive tenderness of the affected area. The skin of this area was pinkish and swollen, and presented a few discrete areas of scaling, suggesting seborrheic keratoses. The hair of the scalp was scant, more so on the affected side. The right eye showed a corneal opacity, which limited its vision to the perception of light. The patient had been treated with galvanism, ointments and lotions, ionization, quartz lamp and roentgen therapy without benefit.

Laboratory examinations made at the Neurological Institute were as follows: The urine showed no abnormal ingredients. The hemoglobin was 80 per cent; white blood cells, 5,500, and red blood cells, 4,400,000. The differential count gave 74 per cent of polymorphonuclear leukocytes. The Wassermann reactions of the blood and spinal fluid were negative. The basal metabolism was + 23. Chemical analysis of the blood showed: urea, 35; urea nitrogen, 16.4, and sugar, 125 mg. per hundred cubic centimeters. Examination of the fundi showed nothing abnormal.

The patient was a small, delicate looking woman, whose general health appeared to be fair despite the pain she had suffered.

DISCUSSION

DR. FRED WISE: In a recent article published in the ARCHIVES, Sidlick reported favorable results from the use of injections of pituitary solution employed for the relief of pain accompanying herpes zoster.

DR. BINFORD THRONE: On account of the high metabolic rate shown by this patient, I would suggest that some preparation of suprarenal gland be tried. On the advice of Dr. John Rogers, we have tried this line of therapy in cases showing such conditions, and it has reduced the high basal metabolic rate, and in cases of acrodermatitis chronica atrophicans, it has made the patient much more comfortable.

DR. FRANK C. COMBES: I would suggest the administration of neoarsphenamine.

SARCOID OF BOECK (FLAT ANNULAR TYPE). Presented by DR. HOWARD FOX.

M. E., a white woman, aged 67, married, first noticed the eruption four years prior to presentation. The first lesion, which was near the nostril, was considered to be a mole and was excised. New lesions then gradually appeared, until, as presented, there were about fifteen of them scattered over the forehead, cheeks and chin. There were two distinct types of lesions, including elevated nodules and circinate plaques. The nodules were split pea-sized, round or oval, bluish, with a few telangiectases, and firm to the touch. The circinate lesions varied in size from that of a large split pea to that of a twenty-five cent piece, with a slightly raised, firm, waxy border and some clearing in the center. There were also a few small macular lesions, slightly scaly, dull yellowish-red, apparently atrophic, suggesting the early stage of the circinate lesions. On the frontal region of the scalp there was also a scaly patch looking like seborrheic eczema. The circinate lesions suggested a basal cell epithelioma or possibly lupus erythematosus. A tentative diagnosis of sarcoid was made before the histologic report was received, on account of the close resemblance to another case presented to the Society within the past year. The histologic examination showed an undoubted sarcoid of Boeck. The patient was a medium-sized woman in excellent health, giving no family or personal history of tuberculosis.

DISCUSSION

DR. GEORGE M. MACKEE: Clinically, this case presents some resemblance to basal cell epithelioma and lupus erythematosus, but it is too nodular for the latter, and the rim is not of the pearly nature seen in the former; so, clinically, the diagnosis of sarcoid is justified.

A Case for Diagnosis (Ulcer of the Hand and the Foot). Presented by Dr. Howard Fox.

M. J. H., a man, aged 48, an operator in a radio factory, had suffered from an ulceration of the wrist for four or five years and one on the foot for three years. The lesion on the wrist extended onto the palm and occupied an area of 1½ by 2 inches (3.75 by 5 cm.). It consisted of reddish, boggy, coffee bean-sized lumps, tending to coalesce. In the center of the mass was a small irregular-shaped ulcer with a deep-seated sinus which had discharged for four years. It suggested a mycotic infection, such as actinomycosis. On the outer border of the right foot was an ulcer the size of a silver dollar, with firm elevated border and uneven reddish granulations and with a slight discharge. It was moderately tender. There was very slight inflammation surrounding the ulcer, which suggested a possible epithelioma. The factory records showed that on one occasion the Wassermann reaction was negative. Roentgenograms of the hand showed "suggestive arthritic changes and also rarefaction of carpal bones and distal head of the radius."

A histologic examination of the ulcer of the foot made subsequent to presentation, showed basal cell epithelioma.

DISCUSSION

Dr. Binford Throne: This condition suggests actinomycosis. If it should be shown that this is the case, I would suggest that the patient be given intravenous injections of a mixture of compound solution of iodine and sodium thiosulphate, as suggested by Ravaut. I have tried this in a case of tinea profunda, with excellent results.

Dr. Walter J. Highman: The lesion on the hand makes me think of actinomycosis. It is possibly some other infection. I should also think of syringomyelia.

Charles M. Williams: It is an infection of some kind, possibly tuberculosis, and I would suggest inoculations of material from the lesions into guinea-pigs.

Mycosis Fungoides. Presented by Dr. Fred Wise.

M.D., a man, aged 32, a native of Canada, was referred by Dr. Gordon Campbell of Montreal. His skin disease had begun about ten months previously. He first consulted the presenter on June 25, 1929. At that time the eruption appeared as a universal erythroderma, associated with infiltration and lichenification of the entire skin and accompanied by scattered, large and small areas of deep brownish pigmentation, like that resulting from lichen planus in its late stage of involution. He had been receiving injections of arsenic at the time, and the question of arsenical pigmentation was considered. Roentgen treatment had also been administered, so that it was difficult to interpret the probable cause of the widespread pigmentation.

Despite treatment with radiation, injections of arsenic and of sodium thiosulphate, shock therapy with foreign proteins and so forth, the infiltration and lichenification of the skin became progressively worse. During the past six months, infiltrated, circumscribed, knotlike elevations appeared on the back, forearms and buttocks, accompanied by severe pruritus. The general health remained unaffected during the entire course of the disease. The inguinal glands were much enlarged.

Microscopic examination of an infiltrated nodule from the back revealed the structure of mycosis fungoides. The patient was referred to Dr. C. N. Meyers for examination as to the retention of arsenic and for a general examination of the blood and urine. Dr. Meyers reported as follows: Examination of the blood revealed: solids, 22.01 per cent; arsenic, 0.05 mg. per hundred grams of solids; sodium chloride, 450.1 mg. per hundred cubic centimeters of blood; sugar, 120.4; urea nitrogen, 10.7; uric acid, 3.57; calcium, 9.7; phosphorus, 2.9; and carbon dioxide, 67.4 per cent by volume. Examination of the urine showed: specific

gravity, 1.025; solids, 4.55, and 0.443 mg. of arsenic per hundred grams of solids; chlorides, 6.022 Gm. per liter, and sugar, 0.1447 per cent. In this test 290.4 cc. of tenth-normal sodium hydroxide was used for 600 cc. of urine.

The serum plasma was cloudy and contained globules of fat, suggesting the necessity for an examination for the cholesterol content of the blood (the patient was unable, due to lack of time to have this done at the time). Several blood counts revealed no abnormalities.

The patient had been treated at various times by Dr. Whitehouse of New York, Dr. Bernauer of Brooklyn, Dr. Campbell of Montreal, Dr. O. M. Wilson of Oklahoma and Dr. Viner of Montreal.

DISCUSSION

DR. HENRY H. WHITEHOUSE: When I first saw the patient, he had an extensive dermatitis and no evidence of infiltration in any circumscribed area. The picture is now changed. If mycosis fungoides can be present to the extent of these lesions without itching, I should say that the disease was that; but I have never seen a case without itching. Today, it is clinically mycosis fungoides.

DR. RAY H. RULISON: I think that it is mycosis fungoides.

DR. WALTER J. HIGHMAN: If the patient received arsenic, it was for a preexisting condition; he had some skin disease before he had the arsenic dermatitis, and, clinically, it is like mycosis fungoides. I think that it is mycosis fungoides, and all that is presented can be explained on that basis.

DR. EUGENE F. TRAUB: The noticeable thing about the patient's appearance at the present time is the marked infiltration of the skin. So many patients have it in whom mycosis fungoides never develops that I do not believe that we should jump to that conclusion. He has verrucose papules and nodules resembling more than anything else those seen in arsenic poisoning. He might well have had arsenic from other sources than from taking it in the form of medicine. A history negative for drugs would not exclude the possibility.

DR. GEORGE M. MACKEE: I understand that in the past the condition has been diagnosed as generalized erythroderma and generalized lichenified eczema, the latter now being termed disseminated neurodermatitis. This case is not one of neurodermatitis, because that is always accompanied by intense pruritus. Generalized erythroderma may itch severely, moderately or hardly at all. It may be caused by arsenic, it may be confused with neurodermatitis or it may turn out to be some member of the lymphoblastoma group. Mycosis fungoides is usually very pruritic, but there may be little, if any, itching. In this case, arsenic may be a contributing factor, but not the cause, because there was dermatitis antedating the administration of arsenic. The fact that roentgen rays were not efficacious speaks against mycosis fungoides. In all probability, however, the case is one of lymphoblastoma, possibly leukemia cutis.

DR. EDWARD R. MALONEY: I agree with the diagnosis of mycosis fungoides.

DR. BINFORD THRONE: The patient's history and what has been said by those who saw him before his present condition developed would seem to indicate that in all probability his first trouble was an eczematoid dermatitis. It is possible that this could have been caused by arsenic which he could have acquired from accidental food contamination or from occupational contact. The more I work with Dr. Meyers on this subject, the more I am convinced of the importance of arsenic in the causation of dermatologic conditions. If the first eruption that this patient had was due to arsenic, then of course the arsenical treatment which he received for it would only have aggravated it. The patient who first attracted my attention to the possibilities of this metal causing such conditions as shown by this case was a man suffering with Duhring's disease, for which he received a large amount of arsenous acid. The condition after treatment did not resemble his original condition in the least, but he did show practically all the symptoms this patient has—the pigmentation, peculiar condition around the follicles of the hair, the hyperkeratosis of the palms and the granulomatous lesions—although

they were not as numerous as those seen in this case. The examination of the urine in Dr. Wise's patient showed 0.440 mg. of arsenic per hundred grams of dried substance. The amount which must be considered normal, or the amount which is frequently found in the absence of all symptoms, is 0.030 mg. This case, then, shows almost fifteen times the normal amount. The case that I presented at the meeting of this Society last spring, with a history of arsenical medication and in which I proposed to test for arsenic determination in the skin, has been examined in this respect and the skin showed 1.018 mg. per hundred grams of dried substance.

The fact that there is a history of the administration of sodium thiosulphate without producing an effect in this case does not mean anything, for the patient told me that he had been given a solution, which he took for a short time. Sodium thiosulphate is absolutely useless unless it is prepared at the time of administration if it is to be given by injection, or if it is for oral administration, it must be given in enteric coated tablets. When it is dissolved, its composition changes rapidly, and in my clinic, we do not use any that has been prepared for more than a few minutes.

DR. FRED WISE: Dr. Walter J. Highman has just examined the microscopic slide, and he verified the diagnosis of mycosis fungoides.

LUPUS ERYTHEMATOSUS (TELANGIECTATIC TYPE). Presented by DR. FRANK C. COMBES.

S. N., a boy, aged 17, presented a group of lesions confined to the face of five years' duration. They consisted mostly of well defined erythematous patches, with irregular borders, scattered over cheeks, nose, lips and ears. With the exception of the nose and lips, which were completely covered, they were not raised or infiltrated. The patches consisted almost entirely of fine telangiectases with central patches of cicatricial atrophy. There was practically no scaling, and only on the nose was there evidence of follicular patulance. Both ears were entirely covered with telangiectases and interspersed with atrophied patches. Both lips were dark red and smooth. The edge of the lesions at the vermilion border was slightly elevated and ended abruptly in a wavy line.

ZOSTER ACCOMPANIED BY FACIAL PARALYSIS. Presented by DR. WALTER J. HIGHMAN.

W. R., an American architect, aged 51, was seized with severe pain in his right ear in the last week of July, 1930. Two days later, an eruption appeared on his face, consisting of two groups of pustules, one on the right malar bone, the other on the right side of the chin. A few scattered blisters appeared on the right side of the back of the tongue and on the mucous membrane of the right cheek. The pain extended, involving the right occiput. Three or four days after the onset of symptoms, a complete right-sided facial palsy developed. The patient at the time was in Antieb, in the French Riviera. The local physicians considered the disease dermatitis herpetiformis. The eruption gradually vanished, the paralysis persisting but gradually improving. Several weeks after the onset, a few isolated spots appeared on the torso, but did not resemble the original eruption. A Wassermann reaction was found to be positive.

Except for rheumatoid pains in various joints, which disappeared after the extraction of all his teeth, the general history had been unimportant. The dental episode occurred five months prior to presentation.

Examination revealed traces of the old eruption on the right side of the chin as faint pink spots. The interior of the mouth was normal. There was marked drooping of the right side of the mouth and weakness of the right eyelids. The Wassermann test performed on Oct. 25, 1930, gave negative results.

The patient was under the care of a neurologist, Dr. Israel Strauss, who intended to publish this case, together with another similar one, from the neurologic standpoint.

DISCUSSION

DR. CHARLES M. WILLIAMS: This is an interesting case. Zoster is caused by an infection in the posterior root, and the symptoms occur in the peripheral distribution of that root. How did the symptoms appear in the distribution of the motor root? Did the infection spread outward to the nerve trunk, or backward to the cord?

PSORIASIS GUTTATA OR PARAPSORIASIS VARIOLIFORMIS (?). Presented by DR. FRED WISE.

I. M., a boy, aged 8, from the skin clinic of the Post-Graduate Hospital, presented a large number of macular, papular and scaly lesions—the last resembling guttate psoriasis. Most of the lesions, notably those on the penis and abdomen, had been modified by scratching. The lesions were irregularly distributed on the trunk and extremities, most of them appearing on the chest, abdomen and penis; the extremities presented only a few lesions. Some of the papules presented umbilications, others were smooth and had a violaceous tint. The lesions were in various stages of evolution and involution. The eruption had existed since July, 1930. There was no itching and no vesicle formation.

DISCUSSION

DR. HENRY H. WHITEHOUSE: I think that this is a case of psoriasis guttata.

DR. HANS SCHWARTZ: I agree with this diagnosis.

DR. W. J. HIGHMAN: I also agree with the diagnosis of psoriasis guttata.

DR. FRANK C. COMBES: I think that it is identical with a case presented at the Academy last spring as parapsoriasis varioliformis.

DR. JOSEPH J. ELLER: I think that it is a case of psoriasis guttata. The lesions come and go without treatment. That points more to psoriasis than to the presenter's other diagnosis.

DR. EUGENE F. TRAUB: This patient has lesions exactly similar to those in a case I presented before this Society last year. I followed my patient for eight months, during which time the lesions followed a definite course of evolution, beginning as an erythematous papule or wheal, with subsequent hemorrhage into the lesion centrally; then the process subsided, the papule becoming flat and covered with a dry, rather powdery scale. A single lesion would run its entire course in from two to six weeks. New crops of lesions constantly replaced the old ones. Two biopsies were reported as parapsoriasis of the Juliusberg type. Dr. Wise's patient has presented today all of these lesions in different stages of development, and probably his case, too, is an unusual form of parapsoriasis.

DR. GEO. M. MACKEE: The eruption is too polymorphous to be psoriasis, unless the crusted lesions are the result of traumatism. Before making a definite diagnosis, I would want to interrogate the patient carefully and obtain a more detailed history. While admitting the possibility of the so-called vesicular type of parapsoriasis, my tentative diagnosis is psoriasis.

CONGENITAL SYPHILIS (?) Presented by DR. FRED WISE.

W. D., aged 6½ years, from the Post-Graduate Hospital, according to the parents, had had good general health since birth. He presented a smooth, pearly, atrophic and glistening appearance of the entire dorsum of the tongue, without subjective symptoms. The finger-nails were brownish, and the surfaces uneven and rugose, presenting a moderate degree of hyperkeratosis. Some of the nails had longitudinal ridges along the center of the nail-plate, with moderate periungual inflammatory reaction. The teeth were normal in appearance. The Wassermann reaction was negative on repeated examinations. It was also negative after the administration of neoarsphenamine and bismuth, in fact, it had never been positive.

The boy's father was said to have been cured of syphilis about five years before his marriage. Repeated Wassermann tests in the father had been negative, and he presented no signs or symptoms of syphilis. The child's mother also had negative Wassermann reactions, and had never suffered ill health before or after marriage. She had not had any miscarriages.

The patient was presented for an interpretation of the smooth atrophy of the tongue and the dystrophy of the nails.

DISCUSSION

DR. HENRY H. WHITEHOUSE: From the appearance of the nails alone, I should say that the case was syphilitic. I can almost duplicate the appearance of the nails in a patient with syphilis whose nails were once spoon-shaped; they finally developed into the short, congenital, stubby nails seen in this case. The negative Wassermann reaction would have no meaning in this case.

DR. WALTER J. HIGHMAN: What throws one off is the fact that the father had syphilis. The boy has glossitis and dystrophy of the nails. I have only a hypothesis to advance. I do not think that this case is syphilitic but an embryonal disturbance in the group of epidermal dystrophy involving the lingual mucosa and nails, even though this belief does not seem easily proved.

DR. FRANK C. COMBES: I agree with Dr. Highman; the lesion on the tongue is dystrophy in the form of an ectodermal defect. It is suggestive of a nevus. The boy has a vascular nevus on the mucous membrane of his right cheek the size of a thumb-nail. I could not see any leukoplakia at all on his tongue, although there was smooth atrophy present.

DR. CHARLES M. WILLIAMS: There is no evidence that the father had syphilis at the time of his marriage or that the child has ever been infected. The father had syphilis some time before marriage, and it is possible that his sperm-producing mechanism was so altered by the disease as to produce defective sperm, and that this alteration was permanent, although the infection which produced it had disappeared. The problem is part of the broader question of variation in the offspring produced by injury to the germinal apparatus of the parent, and as yet we have not sufficient data to warrant the drawing of any firm conclusions.

DR. JOSEPH J. ELLER: I think that more work ought to be done in excluding syphilis in this boy. Syphilis is known to be one cause of this condition, and the tongue suggests a previous syphilitic lesion.

DR. GEORGE M. MACKEE: This is an exceedingly interesting case and one that is difficult to interpret. The tongue shows a triad that is indicative of syphilis, namely, interstitial glossitis, smooth atrophy and leukoplakia, but, as stated by Dr. Highman, the condition may be an ectodermal defect independent of syphilis. As mentioned by Dr. Williams, there has been considerable discussion relative to ancestral syphilis as the cause of congenital defects. Almost everyone has some insignificant congenital defect, and until we have reliable information to the contrary, it seems preferable to assume that minor defects and even most of the major defects are freaks of nature rather than due to some ancestral pathologic process. I fail to find anything about the nails that particularly suggests syphilis. It is often quite impossible to decide whether or not a given person has syphilis. In this case I prefer to assume an ectodermal defect of unknown cause, unless, at a later period, the patient is proved to be congenitally syphilitic.

DRUG ERUPTION OR MYCOSIS FUNGOIDES (?). Presented by DR. J. FRANK FRASER.

A woman, aged 50, born in Ireland, was first seen at the Cornell Clinic about ten days prior to presentation, with an eruption of nine months' duration. The lesions first appeared on the abdomen and later spread over the trunk and limbs.

Some were slightly infiltrated and some showed fine scales. There was nothing important in the history, except that she had been taking phenolax tablets weekly over a period of eight years. A biopsy from one of the infiltrated lesions established the diagnosis of mycosis fungoides.

DISCUSSION

There was general agreement with the diagnosis of mycosis fungoides.

PARAPSORIASIS (?). Presented by DR. PAUL BECHET.

R. P., a woman, aged 40, stated that the eruption began nine years previous to presentation. The lesions had markedly increased in the previous year. Most of the trunk, the thighs and the upper arms were covered with reddish to copper-colored, sharply defined plaques, some of which were distinctly serpiginous. A few of the lesions were distinctly telangiectatic in the center. There seemed to be no appreciable infiltration. Microscopic examination did not help in the diagnosis. The presenter had considered, also, mycosis fungoides and angioma serpiginosum.

DISCUSSION

The diagnosis of parapsoriasis was accepted without dissent.

DR. PAUL BECHET: I am not so certain of the diagnosis of parapsoriasis. The patient has marked telangiectasia in several of the plaques. While the itching is negligible, still mycosis fungoides sometimes does not itch. A few patches are serpiginous, yet there is no definite infiltration. I believe that the diagnosis of parapsoriasis is correct, but I am not certain about it.

SCLERODERMA (LICHENOID TYPE). Presented by DR. FRED WISE.

A woman, aged 32, applied for treatment for furunculosis at the skin clinic of the Post-Graduate Hospital. On general examination, the lesion for which she was presented was seen on the back in the region of the right scapula. This lesion occupied a roughly quadrangular area about 2 inches (5 cm.) long by 4 inches (10.16 cm.) wide. The surface presented an eruption of somewhat pale, waxy looking lichenoid papules, each of which exhibited a fine central depression, apparently the site of the orifice of a sebaceous gland. These lichenoid papules were only slightly elevated, and their outline could be best discerned by allowing the light to strike the skin at an angle. The patch of affected skin was slightly more firm to the palpating finger than the surrounding normal skin. There were no subjective symptoms. The patient refused a biopsy.

DISCUSSION

DR. GEORGE M. MACKEE: This is probably a case of lichenoid scleroderma, but I have never before noticed one feature that is so conspicous in this case. The papules appear umbilicated, the depressions corresponding to the follicular orifices. Before making a definite diagnosis of scleroderma I would want to exclude a congenital or acquired anomaly of the cutaneous appendages.

DR. PAUL BECHET: The case suggested to me a nevoid condition of some sort.

DR. WALTER J. HIGHMAN: If ever the term lichenoid scleroderma was apt, it is in this case. I do not believe that Dr. Wise meant the condition to be regarded as lichenoid in the sense of lichen planus, but as simulating lichen papules generically, just as in lichen acuminatus papules—to answer Dr. MacKee—are often built about an open follicle. The implication of the term is merely scleroderma in the form of lichenoid papules.

DR. CHARLES M. WILLIAMS: The patch did not look nor feel to me like scleroderma, but seemed to be formed by some disturbance of the follicular apparatus.

DR. JOSEPH J. ELLER: I think that this is a nevus.

DR. EUGENE F. TRAUB: I have not seen such a case before and am glad to see this one, as I would have considered the lesion to be some form of nevus.

NODULO-ULCERATIVE SYPHILID. Presented by DR. EUGENE F. TRAUB.

Mrs. A. W., a stenographer, aged 37, came to the dispensary of the New York Skin and Cancer Hospital on Oct. 24, 1930, complaining of an eruption on the scalp of more than five years' duration, an eruption on the legs of about a year and a half duration and several lesions on the face, the last of which appeared about five days before presentation. The lesions were nodular in the beginning, then ulcerated and finally healed, leaving thin scars. The family and past histories were essentially unimportant. She had been married for fifteen years, and a widow for five years; she had one son, 14 years old, and she had had one miscarriage at the sixth or seventh month about five years before presentation.

Her past treatment had consisted of refrigeration to the lesions on the scalp, roentgen rays to a small gland on the left side of the neck, and some type of iodine preparation internally, probably compound solution of iodine.

The Wassermann reaction was reported to be +3. Microscopic examination of a biopsy section showed an irregular epidermis with occasional efforts at pearl formation. There was a dense cellular exudate scattered throughout the entire depth of the corium, sometimes diffuse and sometimes in islands. The bands of connective tissue that separated the islands had round cells scattered among them. The connective tissue showed numerous nuclei, and near the islands of densest infiltration, was a slight granular degeneration of the connective tissue fibers. The blood vessels were dilated and appeared to be increased in number. Some of the isolated blood vessels not surrounded by cellular exudate were hyperplastic. The cellular exudate was largely lymphocytic with occasional plasma cells. There was slight endarteritis, and nothing to suggest lupus vulgaris.

DISCUSSION

DR. WALTER J. HIGHMAN: I think that the case is syphilitic.

DR. EUGENE F. TRAUB: The patient has been treated for the past five years for lupus vulgaris and Bazin's disease, even a gland in the neck having been given roentgen treatment, because it was considered tuberculous. This, of course, constitutes the interest in the presentation, i. e., the close simulation of tuberculosis.

WOOLY HAIR NEVUS. Presented by DR. FRED WISE.

J. S., aged 21, a student, of Jewish parentage, presented himself at the skin department of the Post-Graduate Medical School and Hospital with the history that one and a half years previously the hair over the left temple began to change in color, texture and character. Shortly afterward, the right temporal area became similarly involved. From the temporal areas, the process gradually extended upward and backward, so that a goodly portion of the scalp was involved at the time of presentation.

On examination, two distinct types of hair were seen. The temporal areas and the anterior portion of the vertex were covered with the newly acquired, short, black, curly, bushy hair. In the transition area, some hair was found, the proximal portion of which was black and curly and the distal portion straight and brown.

DERMATITIS FACTITIA. Presented by DR. FRED WISE.

M. C., aged 17, a clerk, presented herself at the skin clinic of the Post-Graduate Hospital with a lesion in the left deltoid region which had been present for three weeks. The lesion consisted of numerous ruptured vesicles surrounded by zones of erythema which covered an area about 3 by 1 inch (7.6 by 2.5 cm.). She gave a history of a similar lesion on the dorsum of the left hand one month previously.

A tentative diagnosis of recurrent herpes or dermatitis factitia was made. The lesion did not respond to local treatment. A cast was applied for nine days, and at the time of removal, the area was healed and normal in appearance. Five days later there was a recurrence of the lesion, and a cast was again applied. One month later the cast was removed, and normal skin was found. Five days before presentation (October 23), the patient returned with a new and similar lesion on the dorsum of the left hand.

The pharyngeal reflex as well as the corneal reflex was absent, while the knee reflexes were hyperactive.

LICHEN PLANUS MORPHEICUS. Presented by DR. EDWARD R. MALONEY.

E. M., a white man, born in the United States, aged 52, presented an eruption on the flexor surfaces of the wrists and forearms, and on the neck, chest and abdomen. This eruption began seven months prior to presentation, following a generalized pruritus which had existed for several years. It was made up of white spots, varying in size from that of a pinhead to that of a split pea, some of which were slightly rounded and elevated, while others were distinctly atrophic. In some places, particularly on the neck, there were much larger atrophic patches with somewhat violet-colored raised borders.

A microscopic examination of a section of tissue taken from one of these lesions showed atrophic skin.

DISCUSSION

DR. FRED WISE: I agree with the diagnosis. This is a typical instance of the condition described under that name.

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. BINFORD THRONE.

E. S., a Jew, aged 28, was first seen on Sept. 17, 1930. Examination showed yellowish papules and nodules on the elbows and buttocks. The creases of the palms showed yellow discoloration. The patient's mother had died of diabetes.

A chemical analysis of the blood revealed: chlorides, 458.5; sugar, 103.2; urea nitrogen, 21.8 and uric acid, 3.59.

Examination of the blood showed:

	Whole Blood	Serum	Plasma
Cholesterol	333.0	255	277.0
Fatty acids	452.4	731	681.3

The carbon dioxide was 63.2 per cent by volume.

The dextrose tolerance test on October 1, showed:

	Chlorides	Sugar	Urea Nitrogen	Uric Acid
Before	450.1	94.8	24.0	2.5
After ½ hour	462.7	133.0	23.9	3.71
After 1 hour	471.0	166.0	22.0	3.84
After 1½ hours	487.6	119.0	22.0	3.71
After 2 hours	483.5	126.0	20.3	3.78
After 3 hours	462.7	116.4	20.3	3.76
After 4 hours	454.3	84.2	20.3	3.25

XANTHOMA DIABETICORUM. Presented by DR. BINFORD THRONE.

A man, aged 42, born in Switzerland, was seen first on Oct. 3, 1930. He said that he had had a similar condition three years previously, which lasted two or three months. The eruption for which he was presented developed in March, 1930.

Examination showed papules, varying from about ⅛ to ½ inch (0.3 to 1.27 cm.) in diameter, on the extensor surfaces of the arms, forearms, buttocks, thighs and lower part of the back. In a few instances they were confluent. The papules were acuminate with a marked yellow top and a reddish base. This redness was most marked in the lesions on the buttocks and back. The elbows and knees were almost entirely free from the eruption. Urinalysis showed 1.8 per cent sugar.

A chemical analysis of the blood on October 3, showed: chlorides, 462.7; sugar 193; urea nitrogen, 15.1, and uric acid, 3.4.

Examination of the blood revealed:

	Whole Blood	Serum	Plasma
Cholesterol	243	297	285
Total fatty acids	665	600	455

A dextrose tolerance test on October 18, showed:

	Chlorides	Sugar	Urea Nitrogen	Uric Acid
Before	450.1	140.8	14.7	3.33
After ½ hour	466.8	216.8	13.7	3.4
After 1 hour	471.0	222.4	14.1	3.23
After 1½ hours	475.1	212.6	13.7	3.23
After 2 hours	475.1	198.6	13.3	2.92
After 3 hours	483.5	130.2	12.7	3.24
After 4 hours	475.1	80.3	14.4	2.51

The basal metabolic rate was + 13.4 per cent.

MELANOCARCINOMA OF THE BIG TOE. Presented by DR. FRED WISE.

A. P., a man, aged 56, presented himself at the department of dermatology and syphilology of the New York Post-Graduate Medical School and Hospital with a history of trouble with the left big toe which dated back eight years. At that time a barrel had fallen on the toe which caused the loss of the toe-nail. For two years subsequently, he was well. Six years prior to presentation, the toe became sore and had continued to get worse.

On examination, the left big toe was found to be much enlarged and a dusky red. The dorsum of the toe showed the absence of the nail, and was covered with a yellowish exudate and granulation tissue. The eponychium was irregular, and in some spots a gangrenous black.

DERMATITIS HERPETIFORMIS AND LUPUS ERYTHEMATOSUS. Presented by DR. PAUL BECHET.

C. M., a man, aged 56, stated that the lesion on his face had begun seven months prior to presentation. One month later, a generalized eruption appeared. On inspection, a large, red, dry, scaly patch was noticed which covered most of the nose and adjacent cheeks. It was hyperkeratotic, with sharply defined borders —typical of lupus erythematosus.

On the chest, back and abdomen were grouped vesicobullous lesions with a tendency to circinate formation. These lesions itched considerably. Arsenical treatment and autohemotherapy had had a noticeably beneficial effect on the vesicobullous lesions on the trunk, but the patch on the face had remained unchanged.

DISCUSSION

DR. FRED WISE: I regard the lesions on the face, buccal mucosae and trunk as manifestations of one disease, namely, the type of pemphigus of which examples were described by Senear and Usher in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY.

DR WALTER J. HIGHMAN: I do not think that it looks like lupus erythematosus. It looks like a bleb, and I agree with Dr. Wise.

DR. PAUL BECHET: The man has a scaly, hyperkeratotic patch on his face; there are enlarged, patulous, follicular openings; the patch antedates the eruption on the body by a month; it has a "butterfly" distribution, and is sharply outlined. It has all the earmarks of typical lupus erythematosus. The lesions on the body are vesicobullous, with a tendency to marked grouping and intense pruritus. The grouping, intense itching and pigmentation are much more suggestive of dermatitis herpetiformis than of pemphigus.

MANHATTAN DERMATOLOGIC SOCIETY

JEROME KINGSBURY, M.D., *Chairman*

Nov. 11, 1930

M. B. PAROUNAGIAN, M.D., *Secretary*

LUPUS ERYTHEMATOSUS OR BASAL CELL EPITHELIOMA (?). Presented by DR. MAX SCHEER.

I. G., a woman, aged 25, a bookkeeper, from the Post-Graduate Skin Clinic, first noticed a small lesion on the left temple two years prior to presentation. Since that time the lesion had doubled in size. The patient stated that at times some pus and blood had exuded. She had been treated recently by a dermatologist who prescribed various salves and had used "violet ray."

On the left temple there was a lesion 1.5 by 1 cm. in diameter. It was pale red and covered with a thin yellowish crust which on removal disclosed one or two bleeding points. The outer border of the lesion was slightly elevated very thin and pearly white, suggestive of that seen in a superficial basal cell epithelioma.

DISCUSSION

DR. LOUIS B. MOUNT: Of the two diagnoses, lupus erythematosus can readily be excluded. The material on the surface is not scaly; it is dried serum and can easily be lifted off, disclosing an exuding surface. This is not the picture of lupus erythematosus.

DR. JOHN FRANK FRASER: I feel that Dr. Mount's conception of the case is correct. Examination of the lesion with a lens reveals the presence of the pearl-like border, which one usually finds in epithelioma. Some of the superficial epitheliomas do not show this border. The case should be classified as belonging to the superficial type of basal cell epithelioma described by Dr. Wise. Dr. Scheer can settle the question of diagnosis by microscopic examination.

DR. ANDREW JAMES GILMOUR: I think the condition is a superficial epithelioma. I saw the pearly white border.

LEUKODERMA SYPHILITICUM. Presented by DR. M. B. PAROUNAGIAN.

T. K., a man, aged 24, was first seen on Nov. 5, 1930. He had contracted a chancre, near the frenum, and gonorrhea about four months previously. The examination revealed the following: more or less generalized multiform eruption, condylomas in the anal and umbilical regions, syphilitic alopecia and mucous patches in the throat. In addition to the genital lesion, a healed lesion on the upper third of the lateral aspect of the left thigh, was quite suggestive of a healed chancre. The object of presentation was the very unusual type and location of the syphilitic leukoderma on the arms, whereas the most common location, the sides of the neck, was almost free. His Wassermann reaction was not reported.

IODODERMA. Presented by DR. JOSEPH J. ELLER.

This case was presented previously before this society in October, 1930.

At the previous meeting the majority of the members present made a diagnosis of iododerma, both from the history and the clinical picture. Two members thought that it was secondary syphilis, and one suggested that it might be an atypical mycosis fungoides. Dr. Howard Fox suggested that stains be made on serum from the lesions for spirochetes. This was done and reported negative.

Examination of the urine showed the presence of iodine. The patient had not been taking any iodides for eight or nine weeks. Two days prior to the second

presentation, the biochemist found 1 Gm. of iodine in a twenty-four hour specimen of urine. Since then the specimens of urine had showed the presence of iodide consistently.

A microscopic section was studied by Dr. Ewing, who suggested that it might be an amelanotic melanoma. The possibility of its being in the lymphoblastoma group was suggested, and Dr. Ewing could not agree with this possibility. Dr. Paul Klemperer thought that it might be a metastatic tumor from the suprarenal gland or from the kidney. Dr. Alexander Fraser suggested that it might be a reticulous tumor.

Dr. J. Frank Fraser thought it was mycosis fungoides from his studies of the sections. Dr. Udo Wile, who saw the patient and studied the sections, made a diagnosis of mycosis fungoides.

The tumors had become larger since the first presentation, and the new tumors have been developing. The temperature rose to 103 F., although it was not of septic type. The patient was given blood transfusions and injections of dextrose. Several places could be seen where the tumors had dropped off, leaving smooth skin behind. The pathologists did not know of any metastatic tumor that would do this.

Even though mycosis fungoides was known to undergo spontaneous involution, no one knew of any that went through such a cycle in three or four weeks. Some lesions were becoming dry. The lesions began as reddish macules soon becoming papular and then developing central scaling. They then became indurated and assumed the appearance of crusted oyster-shell-like lesions with the exudation of serum. The serous exudation was from fully developed lesions. The serum exuded, and the lesions then became dry; some of them dropped off leaving a normal appearing skin.

DISCUSSION

DR. LUDWIG OULMANN: I am of the opinion, even after having seen the histologic section, that it is an iododerma eruption. There is an increased hyperplasia of the epithelial structure of the skin and its appendages, which I regard as inflammatory and not caused by malignancy, and those changes, I feel, are due to the iodine, all of which fits the clinical picture.

DR. LOUIS B. MOUNT: The fact that iodine is appearing regularly in the urine in considerable amounts would sway me to adhere to the diagnosis of iododerma eruption.

DR. I. ROSEN: There seems to be a good deal of diversity of opinion from the pathologic standpoint. If the pathologists could not arrive at a diagnosis after examination of the tissue, microscopically, one could not expect a clinical diagnosis. At the last meeting I suggested the diagnosis of an unusual form of syphilis or psoriasis. From later reports of the case and the continuous finding of large quantities of iodine in the urine, I suggest that it is possible that one of the organs has been accumulating this drug, from which depot it is being constantly eliminated.

DR. LOUIS B. MOUNT: I cannot see how this could possibly be any form of new growth from the comparatively short cycle of each individual lesion. These growths have an evolution and involution period of about twelve to fourteen days, with restitution to normal. I cannot coordinate that with any new growth.

DR. MAX SCHEER: Fungating tumors of mycosis fungoides may disappear and leave behind but little trace of their existence. It is curious that in this patient the disease has become much worse with the climination of iodides, which argues against its being an iodide eruption.

DR. FRED WISE: I have observed the patient on a number of occasions and believe the eruption to be an iododerma tuberosum.

DR. JOHN FRANK FRASER: I think that we are dealing here with a case of mycosis fungoides. This view is based on both clinical and histologic grounds. On the clinical side, the evolution of the lesions corresponds with the life history of the fungoid or tumor growths seen in the so-called tumor stage of that disease.

The development of the lesions has been carefully watched by Dr. Everett Fox who observed that they first appeared as red macules. These macules soon showed signs of infiltration and developed into nodules which became scaly and crusted and finally disappeared without leaving a scar. These phenomena have been frequently observed in mycosis fungoides. Histologically, the evidence is even more convincing. The morphology of the cells, their distribution in the upper layers of the corium and the tendency to infiltrate the epidermis with the formation of cell nests make up a picture which, in my opinion, is sufficiently characteristic to confirm the clinical diagnosis. I reported a case with an identical histologic picture in 1925 (Fraser, ARCH. OF DERMAT. & SYPH. **11**:425 [April] 1925; case 2). That case ran a clinical course typical of mycosis fungoides. The histologic picture was interpreted as a new growth having its origin from the perivascular reticular cells of the skin.

I believe that the essential lesion of mycosis fungoides has its origin in the reticulo-endothelial system of the skin and that the case under discussion should be recorded as an example of that disease. If the condition were melanoma or suprarenal carcinoma, by this time there should be evidence of metastasis. There is no such evidence. There is not even involvement of the lymph nodes.

I cannot conceive of a histologic picture like this occuring in a case of uncomplicated iododerma. It is possible, however, that the metabolism of iodine by the reticular cells may have hastened the development of the lesions.

DR. M. B. PAROUNAGIAN: I also thought as the minority did, of rupial syphilid, but, after seeing the patient again, I am beginning to think iododerma is the correct diagnosis.

DR. JOSEPH J. ELLER: No iodides have been administered during observation or treatment.

DR. JEROME KINGSBURY: Has this patient had any syphilitic treatment?

DR. JOSEPH J. ELLER: He has had a provocative Wassermann test.

PITYRIASIS LICHENOIDES CHRONICA. Presented by DR. ISADORE ROSEN.

This case was previously presented before the New York Academy of Medicine, Section on Dermatology and Syphilology, on Nov. 4, 1930.

DISCUSSION

DR. J. FRANK FRASER: I agree with Dr. Rosen's diagnosis of parapsoriasis, which is supported strongly by the histologic changes. The case belongs in the parapsoriasis group.

DR. JOSEPH J. ELLER: I felt that this was a case of parapsoriasis when I saw it at the previous meeting. Tonight the skin seems more smooth. The lesions are less evident. The skin in general looks slightly better. I think that this is parapsoriasis having an unusual appearance in certain areas of the body.

DR. LOUIS B. MOUNT: I agree with the diagnosis of pityriasis lichenoides chronica.

DR. MAX SCHEER: I think that this is parapsoriasis. I do not think the man has purpuric spots; the color can be made to disappear on pressure; they are telangiectatic spots.

DR. FRED WISE: I believe that the eruption is a parapsoriasis of the mixed type.

PARAFFINOMA. Presented by DR. FRED WISE.

A. P., a woman, aged *27*, married, presented herself at the New York Post-Graduate Hospital Clinic on Nov. 11, 1930. She applied for the treatment of an egg-shaped tumor of the left side of the chin. Three weeks prior to her appearance, she had had an automobile accident in which she had sustained a cut on the chin which left a linear, depressed scar about an inch long. This depression

was filled out by an injection which presumably was paraffin. Examination revealed an oval tumor about an inch long and one-half an inch broad, very firm to the touch, elevated about one-eighth of an inch. The skin over the tumor and immediately surrounding it was highly inflamed but not painful.

DISCUSSION

DR. MAX SCHEER: The longer the paraffin remains the more difficult it will be to get rid of it; it will probably travel, causing more deformity, and dissection will be an extremely difficult procedure. In spite of the resulting scar from an operation, I am of the opinion that the entire lesion should be excised.

DR. JOHN FRANK FRASER: I agree with Dr. Scheer. These specimens make excellent material for the demonstration of foreign body giant cells.

DR. JOSEPH J. ELLER: I do not think that this woman had very much paraffin injected. In order to cut that out now, it would leave a scar at least 1 inch long. I doubt whether leaving it there for some length of time would increase the opening needed to clean it out. I do agree that it might be more difficult later for the paraffin might form into small collections. However, the inflammation might subside and the lesion may improve greatly. The deformity might not be as bad as a surgical removal. I would be inclined to wait some time before attempting treatment.

DR. ANDREW GILMOUR: I believe one can wait for the acute inflammation to subside and then, as Dr. Eller suggested, if necessary, one can operate later. I think one can operate on the inside of the mouth, take the mass out, and avoid scar on the outside. Many years ago I performed such an operation; the paraffin came out in dozens of pearly granules.

DR. LUDWIG OULMANN: I would use in such a case medical diathermy, at first, followed by massage.

DR. M. B. PAROUNAGIAN: I entirely agree with Dr. Scheer, the longer such tumors remain, the more likely they are to get worse.

LEUKOPLAKIA AND EPITHELIOMA (?). Presented by DR. FRED WISE.

W. N., a man, aged 44, an excessive smoker of cigarets, presented himself for treatment at the New York Post-Graduate Hospital Clinic on Nov. 11, 1930, with an advanced leukoplakia of both sides of the mouth, located chiefly at the site of the junction of the upper and lower jaws. On the buccal mucosa there was an indurated, linear ulceration, associated with a fissure about 1 inch long, the edges slightly undetermined and firm to the touch. There was no palpable adenitis. The duration of the ulcer was said to be two months. The Wassermann reaction was reported as negative. The lesion resembled both tuberculosis and epithelioma.

DISCUSSION

DR. LUDWIG OULMANN: The wife of the patient stated that there had never been any pain in the mouth, which is against tuberculosis. I am not so sure that epithelioma is yet present and I would do a biopsy on this patient. If there is an epithelioma, the salivary glands would also be affected, and the prognosis be bad. The condition is very diffuse. I regard it so far as a generalized stomatitis plus leukoplakia.

DR. LOUIS B. MOUNT: I should like to ask if the man wears a denture?

DR. ANDREW GILMOUR: Yes, he wears a denture.

DR. LOUIS B. MOUNT: The lesion is along the line where a bad denture might produce some such appearance.

DR. MAX SCHEER: Aside from the undoubted fact that the patient has leukoplakia, I do not think we can say much. There is as yet no definite clinical evidence of either tuberculosis or cancer.

DR. J. FRANK FRASER: The lesion is too much indurated for a tuberculous process; in the second place, the buccal membrane is a rare location for such a lesion unless there is an active primary process in the lungs or larynx. The presence of leukoplakia, the hardness of the lesion and the history of dental irritation favor the diagnosis of epithelioma. As it is impossible to make an absolute diagnosis on the clinical appearance, I would suggest a biopsy.

DR. JOSEPH J. ELLER: I agree that one cannot make a diagnosis in this case definitely without a microscopic study. I do not think that this patient has epithelioma or tuberculosis, but that he will get an epithelioma if the irritation from his denture is continued. This man has been wearing an ill-fitting plate, and I believe he has now only a thickened and spongy leukoplakia, which has become fissured and will develop a carcinoma if not treated. There is a similar condition, but not as marked, on the mucous membrane of the other cheek.

DR. M. B. PAROUNAGIAN: As Dr. Fraser said, I think the presence of leukoplakia and considerable irritation from smoking point to epithelioma.

BROMODERMA. Presented by DR. ANDREW GILMOUR.

E. G., a Hungarian woman, aged 30, married, stated that for the past month she had taken 45 grains (2.92 Gm.) of sodium bromide a day. About a week prior to presentation, pustules had appeared on her chest and legs. The past history was unimportant. Physical examination showed papules on the chest and also on the legs, which showed a few larger nodules three-fourths inch in diameter and slightly verrucose.

DISCUSSION

DR. J. FRANK FRASER: I agree with Dr. Gilmour's diagnosis. Without a history, however, I do not think one could say whether it was an iodide or bromide eruption.

DR. MAX SCHEER: I agree with the diagnosis of bromoderma. The patient presents several hypertrophic and verrucose lesions on the legs.

PEMPHIGUS. Presented by DR. M. B. PAROUNAGIAN.

H. N., a photographer, aged 22, stated that his lesions had been present for about one and one-half years. They consisted of bullae and vesicles intermingled with crusts and impetigo-like lesions.

Although he had been away from his usual occupation for some time, he had been developing these bullous lesions at regular intervals. The bullae were developing on apparently healthy skin without any erythema around them. There had been considerable itching. He had no involvement of the mucous membrane. The eruption was limited to the head and neck. The Wassermann test was negative. On the day of presentation no active lesions were present except the erythematous remains of the former lesions.

DISCUSSION

DR. ISADORE ROSEN: I do not agree with the diagnosis as presented. I doubt that the patient had bullous lesions on the face, and the eruption, in my opinion, is a severe dermatitis venenata.

DR. FRED WISE: I believe that the eruption is a dermatitis venenata, due to contact with chemical substances used in the patient's work.

DR. ANDREW GILMOUR: I think that this is dermatitis venenata. The patient is a photographer. He said that most of his work was with chemicals.

DR. LOUIS B. MOUNT: My impression was that the condition is a dermatitis venenata. It might be interesting to see if he could be kept from further attacks by keeping the face lubricated while he is at work.

DR. M. B. PAROUNAGIAN: The duration is one and a half years, but he has not been at his usual occupation for over a month. He has been seen by various men. He was trying to make a compensation case out of this. I was told Dr. Kingsbury testified in the case. He came to my office about three weeks ago, with various sized bullae springing up on healthy skin. When I saw him he had been away from work over a month. He does not come in contact with chemicals and uses no hair tonics or face preparations. The last time I saw him (about a week ago) he had active lesions. Today he presented no active lesions excepting the remaining erythema. I am convinced that the patient is not a malingerer and that it is not dermatitis venenata.

LICHEN PLANUS (GENERALIZED). Presented by DR. M. B. PAROUNAGIAN.

R. K., a man, aged 34, had been admitted to the skin clinic of Bellevue Hospital on Oct. 17, 1930. The duration of his present eruption had been about one month. The eruption was very extensive, involving practically the whole body — lips, mucous membrane of the mouth, tongue, genitals, hands and feet. The lesions were typical, shiny, violaceous, irregular papules. Some of the lesions were quite scaly; the palms and soles were keratotic and gave the appearance of being of long duration. The itching was intense. The Wassermann examination made on October 20 was negative.

DISCUSSION

DR. ANDREW GILMOUR: I should like to hear suggestions as to treatment; that is the interesting point here.

DR. FRED WISE: I would administer one-quarter skin units of x-rays at weekly intervals and give injections of mercury and arsenic. Many colleagues have had good results with injections of mercuric salicylarsenate.

DR. ISADORE ROSEN: The interesting feature in this case is the presence of extensive palmar involvement. If the palmar lesions only were present, they would have to be distinguished from psoriasis, syphilis and dermatophytosis.

DR. MAX SCHEER: As regards mercuric salicylarsenate, I cannot convince myself, in spite of the content of arsenic and mercury, that it ever helped in any case of lichen planus in which I employed it. I have had one case in which filtered, x-rays were applied to the spine with very marked aggravation of all lesions. After this therapy, the patient had a widespread increase in the number and size of the lesions. My impression was that the treatment may have had something to do with that.

DR. J. FRANK FRASER: I have a case under observation which is clinically identical with this one, even to the palmar lesions. I am treating the patient with one-quarter skin unit doses of x-rays and injections of mercuric salicylarsenate. After hearing Dr. Scheer's remarks, I wonder whether I should discontinue the latter.

DR. MAX SCHEER: At Mount Sinai Hospital there were reported a number of cases resistant to mercuric salicylarsenate and mercury. Those treated with a suspension of bismuth salicylate oil did better. I have never seen such improvement.

DR. LOUIS B. MOUNT: I had one case in which three-quarters skin unit of filtered x-rays was given over two spinal areas; the patient obtained almost immediate relief; the itching disappeared. The second treatment was three or four weeks later, and the eruption had practically disappeared.

A CASE FOR DIAGNOSIS. Presented by DR. ISADORE ROSEN.

This case was previously presented before the New York Academy of Medicine, Section on Dermatology and Syphilology on Nov. 4, 1930, as urticaria pigmentosa or pigmentation following urticaria (?).

DISCUSSION

DR. J. FRANK FRASER: I do not believe that this is a case of urticaria pigmentosa. I prefer to call it pigmentation following urticaria. In the first place, the size and color of the macules do not correspond with the picture of urticaria pigmentosa. The nodular type may have lesions like these, but not the macular. On rubbing these lesions, one does not get the characteristic phenomenon which is usually seen in cases of urticaria pigmentosa. For these reasons I am inclined to favor the view that this is a case of pigmentation following urticaria.

DR. LOUIS B. MOUNT: I think that it is urticaria followed by pigmentation for exactly the same reasons Dr. Fraser expressed. I have seen urticaria where the reaction was so intense there was actually hemorrhage in the lesions; there was, of course, pigmentation following resolution which did not, however, last as long as in Dr. Rosen's case.

DR. M. B. PAROUNAGIAN: We see a great many cases of urticaria. I have never seen pigmentation following urticaria like this. I, personally, would be inclined to make a diagnosis of urticaria pigmentosa.

DR. ISADORE ROSEN: I believe that the case is one of pigmentation following an acute attack of urticaria.

DR. J. FRANK FRASER: If sections showed the characteristic mast cell infiltration, we would have to conclude that the condition was urticaria pigmentosa. One negative examination for mast cells, however, would not rule out the diagnosis of urticaria pigmentosa. (Fraser and Richter, ARCH. DERMAT. & SYPH. **17**:489 [April] 1928.)

DETROIT DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Nov. 18, 1930

C. K. VALADE, M.D., *Presiding*

BOWEN'S DISEASE: HYPERPIGMENTATION DUE TO ARSENIC. Presented by DR. C. A. DOTY.

J. H., a business man, aged 69, had had psoriasis since the age of 15 years. At the age of 29, he had taken large doses of solution of potassium arsenite, and during the three years immediately preceding presentation, he had taken about 30 pints of "psoriasis medicine," a proprietary product. Scattered over the upper part of the trunk, especially posteriorly and over the clavicles, were a number of small and large coin-sized, sharply outlined, erythematous, brownish patches, some of which were slightly infiltrated, and some showing superficial ulceration. There was a generalized grayish-brown mottling of the skin.

HYPERPIGMENTATION DUE TO ARSENIC. Presented by DR. E. C. TROXELL.

W. G., a machinist, aged 25, stated that he had had severe infantile eczema, persisting to the age of 6 years. At the age of 15, the eczema had returned, becoming severe and generalized. Roentgentherapy had been used at times, with apparent benefit which had been merely temporary. For about two months prior to presentation, the patient had been taking a proprietary cure for eczema. After a month of this treatment, universal pigmentary mottling had appeared, most pronounced in the flexor folds.

DISCUSSION ON PAPERS OF DR. DOTY AND DR. TROXELL

DR. A. P. BIDDLE: The first case is apparently one of Bowen's disease. The lesions are probably malignant.

DR. C. K. HASLEY: Has a biopsy examination been made? The epitheliomas may be developing from arsenical keratoses, and if so they would probably be of the squamous cell type.

DR. R. C. JAMIESON: I saw a similar case several years ago. I had always considered Bowen's disease a more or less localized type of malignancy, but I have seen metastasis occur in one case.

DR. H. J. PARKHURST: I could find no arsenical keratoses, and the condition had the appearance of benign superficial epitheliomatosis. The arsenic, as a stimulant of epithelial proliferation, may have accelerated the process.

DR. E. C. TROXELL: Last year I presented another patient with palmar and plantar keratoses following the use of this same proprietary medicine.

SCLERODERMA. Presented by DR. A. P. BIDDLE.

A. B., a girl, aged 10, with some signs of hyperthyroidism, presented a generalized waxy induration of the skin of two months' duration, which had at first shown some edema. The condition had first appeared on the ankles and shins, and the hairs in these regions had then lengthened abnormally.

SCLERODERMA. Presented by DR. C. K. HASLEY.

E. E., a girl, aged 11, had had all of the usual diseases of childhood, and her tonsils showed signs of infection. There was a generalized thickening of the skin, of only two weeks' duration.

DISCUSSION

DR. H. L. KEIM: The history of previous dysfunction of the thyroid probably has some bearing on the scleroderma in the first case.

DR. R. C. JAMIESON: The sclerodermic state seems to be related to changes in the thyroid or the endocrine glands.

DR. H. J. PARKHURST: I have seen patients with similar cases improve after the administration of small doses of thyroid extract, but in the first case such therapy might be contraindicated.

DR. L. W. SHAFFER: Regarding Dr. Hasley's case of acute generalized scleroderma, in what sequence did the infections occur preceding this condition?

DR. C. K. HASLEY: The patient has had infected tonsils for some time, but no acute infection for eighteen months.

DR. JOHN HOOKEY: I have seen improvement following the intravenous administration of typhoid vaccine in cases of scleroderma occurring after infections of the upper respiratory tract.

CONGENITAL ECTODERMAL DEFECT. Presented by DR. R. C. JAMIESON.

Miss G. F., aged 17, had only a sparse growth of fine, short hair over the scalp, and no eyebrows or eyelashes. The nose was of the saddleback type usually associated with congenital syphilis, and there was also chronic atrophic rhinitis and a perforated nasal septum. The arch of the palate was high, and there were dental defects. The sweat glands appeared to be lacking. The patient's mentality seemed normal. The case is to be reported later in detail.

DISCUSSION

DR. L. W. SHAFFER: This is a typical case of congenital ectodermal defect, similar to Goeckermann's case. The features so suggestive of congenital syphilis usually lead to the erroneous use of antisyphilitic treatment in these cases.

LICHEN PLANUS. Presented by DR. R. A. C. WOLLENBERG.

H. M., a Russian Jew, aged 45, a furrier, had suffered from several emotional shocks during the previous year. There was a generalized, moderately pruritic eruption of small, flat, angular, violaceous papules on the penis, legs and arms, of three months' duration. There were many of these lesions on the palms and soles, where they presented the appearance of small, deep vesicles.

MULTIPLE IDIOPATHIC HEMORRHAGIC SARCOMA (KAPOSI). Presented by DR. C. K. VALADE.

M. E., an Armenian, aged 65, a cobbler, had lived in America for thirty-five years. There was an apparently progressive nodular dermatosis, of two years' duration, with many infiltrated, slate-colored nodules and plaques, varying in size from that of a pea to that of a medium-sized coin, on the feet, ankles and legs. There was also a small nodule on the abdomen and one on the right forefinger. There were cyanotic infiltrations involving the toes of both feet, with edema of the right foot.

DISCUSSION

DR. R. C. JAMIESON: This is a typical case of Kaposi's sarcoma.

LINEAR NEVUS. Presented by DR. A. E. SCHILLER.

A. L., a boy, aged 9, presented a linear, verrucose process, which had first been noticed three years previous to presentation and which had gradually extended, involving the left cheek, arm and forearm, and the left side of the neck.

DISCUSSION

DR. G. W. HYDE: I have obtained good results in such cases with the use of electrodesiccation.

GRANULOMA PYOGENICUM. Presented by DR. L. W. SHAFFER.

C. W., a boy, aged 12, presented a pedunculated, erythematous nodule, the size of a hazelnut, on the distal phalanx of the left index finger. The lesion bled easily. It was of four months' duration, having appeared at the site of a repeatedly excoriated wart. It had been excised two weeks before presentation, but had regrown rapidly. The diagnosis had been confirmed by a biopsy examination.

DISCUSSION

DR. C. K. HASLEY: I recommend hypermassive treatment with roentgen rays.

DR. GEORGE VAN RHEE: Electrocoagulation destroys the lesion immediately and leaves practically no scar.

DR. A. E. SCHILLER: These lesions extend fairly deeply, so that the treatment, to succeed, must not be too superficial.

DR. H. J. PARKHURST: I have obtained excellent results in such cases with electrodesiccation (monopolar), followed by very little scarring.

DR. H. L. KEIM: Since the pathologic condition originates on the endothelial lining of the involved vessel, complete destruction of the growth can be accomplished only by complete obliteration of the efferent vessel, no matter what method is employed.

CONGENITAL DYSTROPHY OF THE NAILS (?). Presented by DR. JOHN H. BESANCON.

M. H., aged 2½ years, presented pitting and yellowish discoloration of the finger-nails and toe-nails, which were said to have been present since birth.

No signs of inflammation had ever been observed. The patient seemed normal in all other respects. Repeated examinations for fungi had given negative results; no cultures had been taken. The Wassermann reaction was negative. There was no history of similar defects in the family.

DISCUSSION

DR. H. J. PARKHURST: Some of the nails appear to be normal; therefore, I should say that the condition seems to be an infectious rather than a congenital defect, and, although the observations have been negative, it may be of mycotic origin.

DRS. E. C. TROXELL, W. G. SAUNDERS and A. E. SCHILLER agreed that the condition was due to infection, probably mycotic.

MUCOUS CYST OF THE TONGUE (TRAUMATIC). Presented by DR. W. G. SAUNDERS.

F. W., a boy, aged 13, stated that he had been struck by a baseball bat on Aug. 15, 1930, with resultant laceration of the tip of the tongue. As this healed, an opalescent tumor, the size of a large pea, apparently cystic, had appeared on the under surface of the tongue in the median line, about 1 cm. from the tip.

DISCUSSION

DR. H. L. KEIM: This is probably a mucous cyst following trauma. I should suggest that it be pierced in order to find out whether mucoid material can be expressed from it.

A CASE FOR DIAGNOSIS: ECZEMA (?). Presented by DR. A. E. SCHILLER.

Mrs. H. J., a Negress, aged 29, had first noticed a vesicular and crusted dermatitis about the left nipple six months previous to presentation, and a month later the right breast had been similarly affected. The condition had persisted bilaterally, with some tendency to dryness and thickening. The involved areas were rather sharply outlined and quite superficial and itched very little. No biopsy examination had been made. Scrapings and cultures from both breasts showed only staphylococci.

DISCUSSION

DR. R. C. JAMIESON: The condition seems to be an eczematoid dermatitis due to fungous infection, or simply a chronic dermatitis due to continued scratching.

DR. L. W. SHAFFER: In such cases one first thinks of the possibility of Paget's disease. However, this condition is bilateral, and such eruptions are often seen in Negresses with pendulous breasts. Therefore I agree with Dr. Jamieson, but if the condition resists treatment for eczema, a biopsy should be performed.

NEURODERMITE AND ALLERGIC (?) DERMATITIS. Presented by DR. GEORGE VAN RHEE.

K., a girl, aged 14, had had constant eruptions on the face and trunk, with frequent exacerbations, since the age of 6 months. The condition seemed to be aggravated especially by carbohydrates in the diet. An erythematous maculopapular eruption involved the scalp, face and shoulders, and there was lichenification in the cubital and popliteal regions.

DISCUSSION

DR. H. J. PARKHURST: Only the upper part of the body is involved, the scalp being markedly so. This would indicate that the original condition was probably seborrheic, although there may have been an allergic element.

GRANULOMA FUNGOIDES. Presented by DR. R. C. JAMIESON.

A. B., a Negro, aged 51, presented a generalized dermatitis in variegated plaques on the trunk, arms and legs, of nine months' duration. The plaques were rounded and irregular, slightly elevated and thickened, with little scaling. They were large and of various sizes, some being confluent. The degree of pruritus was variable. On the palms and soles were sharply outlined, vesicular patches, which were pruritic. The epitrochlear and inguinal lymph nodes were palpable. There was no leukocytosis, and the differential blood count was normal. The Wassermann and Kahn reactions were positive, but antisyphilitic treatment had had no apparent influence on the eruption. The biopsy report had shown nothing definite, excepting a chronic inflammatory reaction in the skin and subcutaneous tissue.

DISCUSSION

DR. GEORGE VAN RHEE: The possibilities of hypertrophic lichen planus and early mycosis fungoides must be considered.

DR. H. J. PARKHURST: The eruption had the configuration of early granuloma fungoides; the histologic observations were of no help. The condition of the hands and feet seems to be dermatophytosis.

DR. H. L. KEIM: The condition looks like lymphoblastoma.

DR. L. W. SHAFFER: The lack of extreme pruritus is peculiar.

DR. GEORGE VAN RHEE: The patient gives a history of extreme pruritus, but he shows none of its effects.

GENERALIZED NEURODERMITE. Presented by DR. R. A. C. WOLLENBERG.

T. M., a Negro, aged 40, had had an extensive, intensely pruritic dermatitis, involving the scrotum, hips, thighs, legs and popliteal regions for twelve years. There were many irregular patches, varying in size from that of a coin to that of a palm, in those areas, with some lichenification.

CLEVELAND DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Nov. 20, 1930

J. R. DRIVER, M.D., *Presiding*

DERMATOMYOSITIS. Presented by DR. JOHN A. TOOMEY (by invitation).

J. O., a girl, aged 11, had had scarlatina a month previous to presentation, and two weeks later she had noticed "tightness" of the skin of the face. This had gradually extended downward, involving the shoulders, the arms and the entire trunk. The involved areas were somewhat tender. The condition was apparently subsiding. The tongue was abnormally thick and felt like cartilage.

DISCUSSION

DR. JOHN A. TOOMEY: This is the third case of the kind that we have observed in the contagious department of the City Hospital. All followed scarlatina. One patient improved in three months under treatment with thyroid extract. A second one improved in three months without treatment, and the present patient seems to be doing likewise.

DR. H. J. PARKHURST: I have lately observed a similar case, following tonsillar infection.

DR. E. W. NETHERTON: The tenderness is suggestive of dermatomyositis.

Dr. JOHN A. TOOMEY: Tenderness was present in all three of our cases. We consider the condition dermatomyositis.

DR. H. N. COLE: Apparently this is dermatomyositis rather than scleroderma.

DR. KARL G. ZWICK, Cincinnati: What is the histopathology? Clinically, the condition resembles sclerema neonatorum more closely than scleroderma.

DR. JOHN A. TOOMEY: We found an increase in the thickness of the tissues, with an occasional lymphocyte and plasma cell.

PITYRIASIS ROSEA. Presented by DR. JOHN A. TOOMEY (by invitation).

C. V., a Negro girl, aged 10, had had slight fever and sore throat eleven days previous to presentation, followed in a day by a lesion on the right thigh and in two days by the appearance of a widespread eruption of small brown scaling macules, which was present at the time of presentation.

DISCUSSION

DR. J. E. FISHER: The oval lesions are suggestive of pityriasis rosea, but the extensive involvement of the face and extremities makes that diagnosis doubtful.

DR. H. J. PARKHURST: I consider this a case of pityriasis rosea. I have previously observed lesions of pityriasis rosea on the scalp, and an English author stated that they are often seen on the scalp in children.

DR. ROBERT E. BARNEY: The constitutional symptoms suggest an infectious origin of pityriasis rosea.

DR. H. N. COLE: The constitutional symptoms were striking. I have often seen crusted lesions on the scalp and elsewhere in patients with pityriasis rosea.

DR. H. F. DEWOLF: The eruption may be confused with a secondary syphilid, especially as it occurs in Negroes. We have often felt enlarged lymph nodes in children with pityriasis rosea.

ROENTGEN RAY DERMATITIS. Presented by DR. JOHN A. GAMMEL.

A. H., aged 30, a bank teller, presented an atrophic, telangiectatic area covering the entire right thenar eminence, of three years' duration, following numerous exposures to the roentgen rays. There were some hyperkeratotic spots in the involved patch and marked scaling.

DISCUSSION

DR. J. R. DRIVER: A full thickness skin graft should be done in this case.

DR. C. L. CUMMER: I have seen excellent results following a full thickness skin graft in a man with extensive roentgen ray dermatitis of the face and hands.

LICHEN PLANUS FOLLOWING DERMATITIS HERPETIFORMIS. Presented by DR. H. N. COLE and DR. JOHN A. GAMMEL.

F. S., a man, aged 25, had been treated at Lakeside Hospital in 1925 and 1926 for dermatitis herpetiformis, and had apparently been cured. Typhoid vaccine, potassium arsenite and roentgen rays had been used. Following this, no eruption had been observed until five months before presentation. There was a pronounced pigmentary mottling of the trunk, and especially on the flexures of the forearm there were many small, flat, violaceous papules, some umbilicated and some showing a moniliform arrangement. Some of the papules were excoriated. On the lower extremities, the lesions were confluent. The buccal mucosa was involved.

DISCUSSION

DR. E. W. NETHERTON: I have seen a typical case of dermatitis herpetiformis clear up, to be followed a year later by typical lichen planus.

DR. J. R. DRIVER: I have noticed a number of similar reports in the French literature.

DR. KARL G. ZWICK: Might not healing vesicles leave a configuration similar to lichen planus in the buccal mucosa?

LICHEN PLANUS. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

A. M., a woman, aged 52, was presented at the October, 1930, meeting of the society, with a possible case of dermatophytosis of the hands and feet. There was fissuring and scaling between the toes, and vesicles had been observed a week after the onset of the disease. Since that time many indurated papules, resembling deep vesicles, had appeared on the hands and feet, and a number of small, flat, polygonal papules were observed in the cubital fossae. No parasites had been found in scrapings or cultures. The patient refused a biopsy.

DISCUSSION

DR. C. L. CUMMER: On the wrists there were some lines of small, polygonal, flat papules, characteristic of lichen planus.

DR. ROBERT E. BARNEY: There was also a suggestion of involvement of the buccal mucosa.

A CASE FOR DIAGNOSIS: ACNITIS (?). Presented by DR. H. N. COLE and DR. J. R. DRIVER.

R. C., a Negro, aged 38, had had phlyctenular keratitis for six weeks, and presented a disseminated eruption of small papules, pustules and ulcers, together with generalized scarring. The intracutaneous tuberculin reaction (1:1,000,000) was positive. There was a history of syphilitic infection in 1916, and a certain amount of treatment had been received. In 1923, the Wassermann reaction had been strongly positive, but it was negative in 1924, 1926 and 1928. Roentgenograms of the chest showed nothing abnormal.

DISCUSSION

DR. KARL G. ZWICK: Clinically, this case looks like a papulonecrotic tuberculid (folliclis or acnitis). It might be interesting to inoculate animals with material from the lesions.

DR. H. N. COLE: The phlyctenular keratitis is unusual in an adult.

DR. J. R. DRIVER: The ophthalmologists think that the condition of the eyes is more suggestive of syphilis than tuberculosis.

DR. ROBERT E. BARNEY: This might be a case of pustular iododerma. There is a striking axillary and inguinal lymphadenitis.

ERYTHEMA INDURATUM; TUBERCULOUS DACTYLITIS. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

M. N., a girl, aged 14, presented a painless swelling of one index finger. She stated that the swelling was of four years' duration, and that at the onset, all of her fingers had been swollen and painful. There was a deeply pigmented, indurated area in the left buttock, with central ulceration and similar lesions on the medial aspect of both thighs and legs. This nodular and ulcerative condition was of two years' duration, and it was said to be worse in cold weather. Roentgenograms of the finger showed slight osteoporosis.

LYMPHANGIOMA. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

S. S., a man, aged 25, presented a large, palm-sized, foul smelling, moist, verrucose mass on the left buttock, in which some deep, translucent elements were

visible. It had been present since birth, and during the first eight years of the patient's life, seven attempts had been made to remove it surgically, followed by recurrence. Since that time it had remained quiescent, until two or three years before presentation, when it had begun to enlarge. Biopsy specimens were presented. Semi-intensive filtered roentgen rays had been employed, with no benefit.

DISCUSSION

DR. E. W. NETHERTON: How deeply does the lesion extend? Can it not be excised?

DR. J. R. DRIVER: It has been excised previously, and has recurred.

SARCOID (BOECK). Presented by DR. J. E. FISHER.

Mrs. L. C. D., aged 21, presented a number of violaceous, kidney bean-sized nodules on the tip of the nose and the lateral surfaces of the arms. The condition was said to be of six years' duration, having first appeared after the extraction of teeth. The Wassermann reaction was negative.

DISCUSSION

DR. H. N. COLE: I agree with the diagnosis of Boeck's sarcoid. Treatment with roentgen rays and arsenic should be beneficial.

DR. J. E. FISHER: Roentgen rays and arsenic are now being employed.

PRICKLE CELL EPITHELIOMA. Presented by DR. M. J. GIBANS.

E. T., a plumber, had first noticed soreness in his mouth four years previous to presentation, after constant smoking of a pipe with a broken stem. Since that time the condition had progressed, and there was a medium coin-sized vegetating patch on the buccal mucosa. The patient had been a habitual tobacco-chewer and smoker. There were many bad teeth and very poor bridge work.

DISCUSSION

DR. C. L. CUMMER: The condition is probably an epithelioma.

DR. H. N. COLE: It is of the type that does not respond well to irradiation.

A CASE FOR DIAGNOSIS. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

R. F., a woman, aged 21, presented erythematous macules on the cheeks and forehead, of over three years' duration. There had been repeated exacerbations, and during the last few months, new lesions had appeared on the forehead. There had been no subjective symptoms.

DISCUSSION

DR. ROBERT E. BARNEY: There was definite follicular hyperkeratosis, particularly in the brows and on the cheeks. A lesion under the chin somewhat resembled granuloma annulare. This case is probably one of lupus erythematosus, but there is a suggestion of miliary lupus disseminatus facei.

DR. KARL G. ZWICK: I would favor a diagnosis of lupus vulgaris.

DR. E. W. NETHERTON: I agree with Dr. Barney. The color and duration of the eruption makes a diagnosis of syphilis unlikely.

DR. H. N. COLE: The lesions on the face might prove to be acnitis, and the one under the chin may be granuloma annulare. No giant cells were found.

DR. H. J. PARKHURST: The lesions seemed macular rather than papular, and there was a central scale in a small patch on the left cheek. This, together with the lesion under the chin, suggested the possibility of lupus erythematosus.

DERMATITIS VENENATA (DUE TO MERCURY?). Presented by DR. JOHN E. RAUSCHKOLB.

J. M., a man, aged 49, stated that he had had the hair removed from his trunk and extremities about October 23, after which some medicine had been applied. Following this, a pruritic eruption had appeared. He had had facial erysipelas from October 29 to November 13, and after his recovery some other ointment had been applied. Immediately afterward, a pruritic, erythematous eruption had appeared. There were many tiny follicular pustules diffusely scattered over the anterior part of the trunk and arms.

DISCUSSION

DR. J. E. RAUSCHKOLB: Apparently the man has an idiosyncrasy to mercury, which was in the ointment applied.

DR. ROBERT E. BARNEY: I have observed a woman in whom a severe mercurial dermatitis appeared over the upper parts of the body after a mercurial ointment had been used on the hands.

DR. C. L. CUMMER: I have recently seen dermatitis from applications of ammoniated mercury in a boy.

DR. KARL G. ZWICK: A patch test should be made. This idiosyncrasy to mercury is not common. In some cases the real cause of the trouble may have been the application of tincture of iodine.

MYCOSIS FUNGOIDES. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

Mrs. E. C. complained of headache, drowsiness, weakness and a generalized eruption, not especially pruritic, which had appeared five years previously, following the delivery of a child. The lesions were single and confluent, dull red, sharply outlined, large and small coin-sized, infiltrated plaques, with some scaling. Sections showed a polymorphous cellular infiltration. The leukocyte count had been 18,400 on one occasion, and 8,600 a week later. There was dental sepsis, and râles and infiltration had been found at the base of the left lung. The Wassermann reaction was negative.

DISCUSSION

DR. ROBERT E. BARNEY: There are purplish red, doughy, infiltrated nodules, signs of scratching on the back, and axillary and inguinal lymphadenitis. I consider this a case of mycosis fungoides.

DR. KARL G. ZWICK: I agree with Dr. Barney. Has any internal medication been administered?

DR. H. N. COLE: Only a few injections of neoarsphenamine have been given. We are now using the roentgen rays. The patient is apparently on the verge of the tumor stage of the disease.

Book Reviews

HANDBUCH DER HAUT- UND GESCHLECHTSKRANKHEITEN. Volume 10, part 2 Lepra. By VICTOR KLINGMÜLLER. Lepra in Literatur und Kunst. By K. GRÖN. Price, 138 marks. Pp. 907. Berlin: Julius Springer, 1930.

In his work on leprosy, Klingmüller, as is usual in these volumes, has covered every imaginable aspect of the subject. The contents are too elaborate even to enumerate. He begins with chapters on the name for leprosy, its history and its geographical distribution, and goes through experimental leprosy in animals and its serology and immunity, and then gives 650 pages to a complete consideration of all aspects of leprosy in man. Finally, there is a useful and full bibliography.

The monograph of 135 pages on leprosy in literature and art by Grön is an example of how thoroughly everything is covered in this encyclopedia. It is an interesting and valuable contribution, and is finely illustrated.

SYPHILIS DES NERVENSYSTEMS. Volume 17, part 1. By G. ALEXANDER, F. JAHNEL, V. KAFKA, V. MUCHA, K. PLATZER, F. PLAUT and G. STEINER. Price, 99.40 marks. Pp. 783.

This part consists of an original and complete statement of the subject, every aspect being covered fully and thoroughly.

SYPHILIS UND DAS AUGE. Volume 17, part 2. By PROF. DR. J. IGERSHEIMER. Price, 92 marks. Pp. 513.

This is a complete exposition of the subject, with many beautiful illustrations in color.

SYPHILIS DER LYMPHGEFÄSSE UND DRÜSEN ORGANE, KNOCHEN, GELENKE, MUSKELIN, MALIGNE SYPHILIS, SYPHILIS IN DEN TROPEN, ENDEMISCHE SYPHILIS, DIAGNOSE UND PROGNOSE. Volume 17, part 3. Price, 63 marks. Pp. 457.

The various topics are not considered as fully here as they are in the other volumes under consideration, but are still adequately covered, in the same painstaking way.

Whenever the reviewer takes up one of the volumes of this great encyclopedia, he is impressed again with the loyalty to scholarship and science in German dermatology that it indicates. They demonstrate not only scholarship and scientific capacity, but the enthusiasm, industry and capacity for painstaking labor of the German dermatologists. The volumes that have now been produced are in their fulness an astounding work. The paper, the printing and the illustrations represent the highest standards of the printing art. The illustrations in color are particularly beautiful, and their cost in the abundance here given would make their production in America prohibitive. Only the rare leadership of Professor Jadassohn could encompass success in such an undertaking.

The dermatologist to whom these volumes are not available is deprived of the greatest condensed treasure of dermatologic knowledge that exists.

DIAGNOSE, DIFFERENTIALDIAGNOSE UND BEHANDLUNG DER HAUT UND GESCHLECHTSKRANKHEITEN. By WALTHER SCHOLTZ. Price, 45 marks. Pp. 507, with 155 illustrations, 32 colored plates and 19 tables. Leipzig: S. Hirzel, 1930.

This is a presentation of diagnosis and treatment, with the idea of providing the practitioner with a reference work more valuable for diagnosis than those

heretofore available. The author devotes 325 pages to dermatology, 122 to syphilis, 66 to gonorrhea, 13 to chancroid and 21 to other venereal diseases. Two appendixes contain a series of prescriptions referred to in the text and a brief consideration of methods of treatment, actinic, thermal, dietary, etc.

Because of his limited space, the author assumes that the reader already has a foundation of information concerning the anatomy and physiology of the skin, and contents himself with touching on the points he considers of special importance or of recent development. The outstanding feature of the book is the emphasis on diagnosis, a discussion of "How to Diagnose Skin Disease" followed by nineteen tables of differential diagnosis, the first fifteen on the basis of the primary lesions of the skin and their development, one of the remaining four on the differentiation of diseases that form ulcers, another on diseases followed by atrophy or scarring, another on the characteristically itching diseases, and the last on diseases that have a decided preference for certain locations. The tables occupy forty-nine pages.

Six pages are given to the subject of local treatment, with references to the two appendixes mentioned. The value of the therapeutic advice is somewhat lessened, as in all books by continental writers, by the proprietary preparations recommended; however, this book is less to be criticized in this regard than most of them.

The author's treatment for the various diseases of the skin is original and interesting; his discussion of syphilis is full of valuable suggestions. The work is valuable for dermatologists and urologists, as well as for the general practitioner. The illustrations are well chosen; the printing is good, and the colored plates, with one exception, are excellent.

THE HAIR. ITS CARE, DISEASES AND TREATMENT. By W. J. O'DONOVEN, Physician to the Skin Department, London Hospital. Price, $3.50. Pp. 218, with 40 halftone illustrations. Philadelphia: P. Blackiston's Son & Company, 1930.

This book, which is written from a British standpoint, is a real contribution to the literature. It gives a good summary of knowledge of the hair and its care, and, what is unusual, it gives some new information.

Its scope is indicated by the table of contents: the arrangement of human hair, ectodermal defects, development, abnormalities of development, scarring alopecia, seborrhea capitis, syphilitic alopecia, the public health aspect, hair dyes and dermatitis, parasites of the scalp, trichorrhexis nodosa, alopecia, alopecia areata, alopecia areata neurogenica, experimental alopecia, ringworm of the scalp, hypertrichosis, pseudo-alopecia. It will be seen from this that the classification is rather unusual, but brings together various parts of the subject in an interesting arrangement. The work comes well up to date, and is written in the clear easy style of one who has a comprehensive grasp of his subject. It is a useful addition to the dermatologic literature.

CORRECTION

In the January issue of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY two errors occurred in the discussion of the paper by Dr. Isadore Rosen and Dr. Frances Krasnow entitled "Lecithin and Cholesterol Studies in Dermatophytosis: Preliminary Report" (**23**:132, 1931). On page 139, "cholesteranemia" in the third line of Dr. Rosen's discussion should read "lecithinemia," and in the tenth line of Dr. Walter J. Highman's discussion, "cholesterolemia."

Directory of Dermatologic Societies *

NATIONAL DERMATOLOGIC SOCIETIES

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

Elmore B. Tauber, Chairman, 19 W. 7th St., Cincinnati.
Francis E. Senear, Secretary, 55 E Washington St., Chicago.
Place: Philadelphia. Time: June 8-12, 1931.

American Dermatological Association

C. Morton Smith, President, 437 Marlboro St., Boston.
W. H. Guy, Secretary, 500 Penn Ave., Pittsburgh.
Place: Toronto. Time: June 15-17, 1931.

British Association of Dermatology and Syphilology (Canadian Branch)

Emerson J. Trow, President, Medical Arts Bldg., Toronto.
Hamnett A. Dixon, Secretary, Medical Arts Bldg., Toronto.

SECTIONAL DERMATOLOGIC SOCIETIES

Baltimore and Washington Dermatological Society

Isaac R. Pels, President, 1010 St. Paul St., Baltimore.
H. Hanford Hopkins, Secretary, Johns Hopkins Hospital, Baltimore.

Iowa and Western Illinois Dermatological Association

J. C. Kessler, President, University Hospital, Iowa City.
J. W. Bailey, Secretary, 10th St. and Grand Ave., Des Moines, Iowa.

New England Dermatological Society

Walter T. Garfield, President, 19 Bay State Rd., Boston.
Rudolph Jacoby, Secretary, 270 Commonwealth Ave., Boston.

Southern Medical Association, Section on Dermatology

Chairman: Clifton Brooks Willmott, 608 S. 4th Ave., Louisville, Ky.
Emmet R. Hall, Secretary, 1001 Exchange Bldg., Memphis, Tenn.

STATE DERMATOLOGIC SOCIETIES

Louisiana Dermatological Society

Thomas A. Maxwell, President, 1119 Union Indemnity Bldg., New Orleans.
R. A. Oriol, Secretary-Treasurer, Maison Blanche Bldg., New Orleans.
Place: New Orleans. Time: April 14-16, 1931.

Medical Society of the State of New York, Section on Dermatology and Syphilology

Earl D. Osborne, Chairman, 471 Delaware Ave., Buffalo.
Leo Spiegel, Secretary, 241 W. 100th St., New York.

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* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
SECTION ON DERMATOLOGY

Sigmund S. Greenbaum, President, 1714 Pine St., Philadelphia.
Stanley Crawford, Secretary, 200, 9th St., Pittsburgh.

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Cyril K. Valade, Chairman, 1604 Eaton Tower, Detroit.
George H. Belote, Secretary, University Hospital, Ann Arbor.

MINNESOTA DERMATOLOGICAL SOCIETY

Edward C. Gager, President, 350 St. Peter St., St. Paul.
D. D. Turnacliff, Secretary, Yeates Bldg., Minneapolis.

OKLAHOMA DERMATOLOGICAL ASSOCIATION

James Stevenson, President, 108 W. 6th St., Tulsa.
W. A. Showman, Secretary, 108 W. 6th St., Tulsa.

LOCAL DERMATOLOGIC SOCIETIES

ATLANTA DERMATOLOGICAL SOCIETY

Francis G. Jones, President, 384 Peachtree St., Atlanta, Ga.
Charles A. Wilkins, Secretary, Medical Arts Bldg., Atlanta, Ga.

BRONX DERMATOLOGICAL SOCIETY

Henry Silver, Chairman, 290 West End Ave., New York.
Theodore Rosenthal, Secretary-Treasurer, 243 West End Ave., New York.

BROOKLYN DERMATOLOGICAL SOCIETY

Abraham Walzer, President, 217 Clinton St., Brooklyn.
A. M. Persky, Secretary, 1750 Ocean Pkwy., Brooklyn.

CHICAGO DERMATOLOGICAL SOCIETY

Henry E. Michelson, 80 S. 7th St., Minneapolis.
E. A. Oliver, Secretary, 55 E. Washington St., Chicago.

CINCINNATI DERMATOLOGICAL SOCIETY

H. Jerry Lavender, President, 716 Provident Bank Bldg., Cincinnati.
L. E. Valker, Secretary-Treasurer, 916 Provident Bank Bldg., Cincinnati.

CLEVELAND DERMATOLOGICAL SOCIETY

J. R. Driver, President, Hanna Bldg., Cleveland.
Robert E. Barney, Secretary, Osborn Bldg., Cleveland.

DETROIT DERMATOLOGICAL SOCIETY

Cyril K. Valade, President, 1604 Eaton Tower, Detroit.
William G. Saunders, Secretary-Treasurer, 9203 Grand River, Detroit.

LOS ANGELES DERMATOLOGICAL SOCIETY

Edward Daland Lovejoy, Chairman, 520 W. 74th St., Los Angeles.
Chris R. Halloran, Secretary, 1052 W. 6th St., Los Angeles.

Manhattan Dermatological Society

Jerome Kingsbury, Chairman, 853 7th Ave., New York.
Mihran B. Parounagian, Secretary, 126 E. 39th St., New York.

Montreal Dermatological Society

Philip Burnett, President, 2 Simpson St., Montreal.
Lemuel P. Ereaux, Secretary-Treasurer, 1390 Sherbrooke St., West, Montreal.

New York Academy of Medicine, Section of Dermatology and Syphilis

Joseph J. Eller, Chairman, 100 W. 59th St., New York.
A. B. Cannon, Secretary, 371 Park Ave., New York.

New York Dermatological Society

Jerome Kingsbury, President, 853 7th Ave., New York.
John Frank Fraser, Secretary, 100 W. 59th St., New York.

Philadelphia Dermatological Society

Carroll S. Wright, President, 1402 Spruce St., Philadelphia.
Jacques P. Guequierre, Secretary, 1930 Chestnut St., Philadelphia.

Pittsbugh Dermatological Society

Louis Willard, Chairman, 500 Penn Ave., Pittsburgh.
James H. Fiscus, Secretary, 121 N. Main St., Greensburg, Pa.

St. Louis Dermatological Society

Richard S. Weiss, President, 3720 Washington Blvd., St. Louis.
M. F. Engman, Jr., Secretary-Treasurer, 3720 Washington Blvd., St. Louis.

San Francisco Dermatological Society

Howard Morrow, President, 384 Post St., San Francisco.
John M. Graves, Secretary, 909 Hyde St., San Francisco.

Index to Current Literature

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